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# **Regulation No. 8**

## **Part B – Asbestos**

**Air Quality Control Commission**



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**Colorado Department  
of Public Health  
and Environment**

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# EMISSION STANDARDS FOR ASBESTOS

EXCERPTED FROM  
REGULATION NO. 8

"The Control of Hazardous Air Pollutants"  
Part B - Emission Standards for Asbestos

COLORADO AIR QUALITY CONTROL  
COMMISSION

Effective: January 30, 2008



REGULATION NO. 8  
The Control of Hazardous Air Pollutants  
PART B  
THE CONTROL OF ASBESTOS  
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	Page
<b>I. INCORPORATED MATERIAL STATEMENT; DEFINITIONS</b> .....	1
I.A. INCORPORATED MATERIALS.....	1
I.B. DEFINITIONS.....	2
I.C. ACRONYMS.....	13
<b>II. CERTIFICATION REQUIREMENTS</b> .....	16
II.A. GENERAL REQUIREMENTS.....	16
II.B. GENERAL ABATEMENT CONTRACTOR CERTIFICATES.....	17
II.C. WORKER, SUPERVISOR, BUILDING INSPECTOR, MANAGEMENT PLANNER, PROJECT DESIGNER CERTIFICATES.....	17
II.D. AIR MONITORING SPECIALIST CERTIFICATES.....	19
II.E. TRAINING PROVIDER APPLICATION PROCEDURES.....	24
II.F. INSTRUCTOR QUALIFICATIONS.....	25
II.G. TRAINING COURSE NOTIFICATIONS.....	25
II.H. TRAINING COURSE AUDITS.....	26
II.I. RECIPROCITY.....	26
II.J. PROJECT MANAGER QUALIFICATIONS.....	27
II.K. DENIAL, SUSPENSION, REVOCATION, OR REFUSAL TO RENEW CERTIFICATION.....	27
II.L. EXEMPTIONS.....	27
<b>III. ABATEMENT, RENOVATION AND DEMOLITION PROJECTS</b> .....	29
III.A. INSPECTION.....	29
III.B. USE OF CERTIFIED AND REQUIRED PERSONNEL.....	30
III.C. PROJECT DESIGN.....	31
III.D. PROJECT MANAGEMENT.....	32
III.E. NOTIFICATIONS.....	32
III.F. ALTERNATIVE PROCEDURES AND VARIANCES.....	34
III.G. PERMITS.....	35
III.H. ABATEMENT SEQUENCE.....	37
III.I. CRITICAL BARRIER INSTALLATION.....	38
III.J. AIR CLEANING AND NEGATIVE PRESSURE REQUIREMENTS.....	39
III.K. DECONTAMINATION UNIT.....	40
III.L. PRE-CLEANING OF SURFACES.....	41
III.M. COVERING FIXED OBJECTS.....	42
III.N. CONTAINMENT COMPONENTS.....	42
III.O. ABATEMENT METHODS.....	44
III.P. CLEARING ABATEMENT PROJECTS.....	46
III.Q. TEAR-DOWN.....	49
III.R. WASTE HANDLING.....	49
III.S. ABATEMENT OF SPECIAL MATERIALS.....	50

III.T. ASBESTOS SPILL RESPONSE.....	52
III.U. MAXIMUM ALLOWABLE ASBESTOS LEVEL .....	54
III.V. SPECIAL REMOVAL METHODS .....	56
III.W. STRUCTURALLY UNSOUND BUILDINGS.....	58
III.X. EXEMPTIONS .....	58
<b>IV. SCHOOL REQUIREMENTS.....</b>	<b>59</b>
IV.A. SCOPE AND PURPOSE.....	59
IV.B. GENERAL LEA RESPONSIBILITIES .....	59
IV.C. INSPECTION AND REINSPECTION .....	61
IV.D. SAMPLING .....	63
IV.E. ANALYSIS.....	64
IV.F. ASSESSMENT.....	65
IV.G. RESPONSE ACTIONS .....	66
IV.H. OPERATIONS AND MAINTENANCE.....	70
IV.I. TRAINING AND PERIODIC SURVEILLANCE.....	72
IV.J. SCHOOL MANAGEMENT PLANS.....	74
IV.K. RECORDKEEPING .....	78
IV.L. WARNING LABELS .....	79
IV.M. EXCLUSIONS.....	79
<b>V. STATE BUILDING REQUIREMENTS .....</b>	<b>82</b>
V.A. SCOPE AND PURPOSE.....	82
V.B. GENERAL STATE AGENCY RESPONSIBILITIES.....	82
V.C. INSPECTIONS .....	83
V.D. SAMPLING .....	83
V.E. ANALYSIS.....	85
V.F. ASSESSMENT .....	85
V.G. RECORDKEEPING .....	87
V.H. EXCLUSIONS.....	87
<b>VI. USE OF ASBESTOS IN THE MANUFACTURING, COMMERCE AND CONSTRUCTION INDUSTRIES .....</b>	<b>89</b>
VI.A. STANDARD FOR ASBESTOS MILLS .....	89
VI.B. STANDARD FOR ROADWAYS.....	89
VI.C. STANDARD FOR MANUFACTURING.....	89
VI.D. STANDARD FOR SPRAYING.....	90
VI.E. STANDARD FOR FABRICATING .....	90
VI.F. STANDARD FOR INSULATING MATERIALS.....	91
<b>VII. STATEMENT OF BASIS AND PURPOSE.....</b>	<b>92</b>
VII.A. AMENDMENT TO SECTION II – INCORPORATION OF THE EPA MODEL ACCREDITATION PLAN BY REFERENCE (March 21, 1996).....	92
VII.B. REVISIONS RESULTING FROM HB 95-1016 (September 19, 1996) .....	92
VII.C. REVISIONS RESULTING FROM SB-01-121, THE DORA ASBESTOS CONTROL PROGRAM 2000 SUNSET REVIEW, AND THE REORGANIZATION OF REGULATION NO. 8, PART B (January 16, 2003) .....	94
VII.D. REVISIONS TO ADDRESS INCORRECT LANGUAGE IN THE SINGLE-FAMILY RESIDENTIAL DWELLING OPT-OUT PROVISION, ROOFING MATERIALS AND TYPOGRAPHICAL ERRORS (December 18, 2003) .....	98

VII.E. REVISIONS TO ADDRESS LANGUAGE IN THE SINGLE-FAMILY  
RESIDENTIAL DWELLING OPT-OUT PROVISION (December 16, 2004) ..... 99

Appendices  
APPENDIX A – SMALL SCALE PROJECTS .....104  
APPENDIX B – RECOMMENDED WORK PRACTICES  
FOR THE REMOVAL OF RESILIENT FLOOR COVERINGS .....107  
APPENDIX C – TRAINING COURSE OUTLINE, REMOVAL OF RESILIENT  
FLOOR COVERINGS IN ACCORDANCE WITH APPENDIX B .....129

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REGULATION NO. 8  
PART B  
ASBESTOS CONTROL

All [underlined text](#) in this regulation indicates defined terms.

**I. INCORPORATED MATERIAL STATEMENT; DEFINITIONS**

**I.A. INCORPORATED MATERIALS**

Some documents are noted in this regulation as being incorporated by reference. Materials incorporated by reference are those in existence as of the dates indicated and do not include later amendments. The material incorporated by reference is available for public inspection during regular business hours at the Office of the Commission, located at 4300 Cherry Creek Drive South, Denver, Colorado 80246-1530, or may be examined at any state publications depository library. Parties wishing to inspect these materials should contact the Technical Secretary of the [Commission](#), located at the Office of the Commission. The following materials are herein incorporated by reference:

- I.A.1. United States Environmental Protection Agency's Asbestos Hazard Emergency Response Act (AHERA), (1995) Subpart E, 40 C.F.R. Part 763, section 1, and Appendix E to Subpart E.
- I.A.2. United States Environmental Protection Agency's Asbestos Hazard Emergency Response Act (AHERA) Model Accreditation Plan (MAP), 40 C.F.R. Part 763 (1994), Subpart E, Appendix C.
- I.A.3. United States Environmental Protection Agency's National Emission Standard for Asbestos, Standard For Waste Disposal For Manufacturing, Fabricating, Demolition, Renovation, And Spraying Operations, 40 C.F.R. part 61 section 150 (1995).
- I.A.4. United States Environmental Protection Agency's August 1994 Method [EPA/600/R-93/116](#), "Method for the Determination of [Asbestos](#) in Bulk Building Materials".
- I.A.5. United States Environmental Protection Agency's "Green Book", Managing [Asbestos](#) in Place, (TS-799) 20T-2003, Appendix G (1990).
- I.A.6. United States Environmental Protection Agency's "Pink Book", Simplified Sampling Scheme for Friable Surfacing Materials, ([EPA 560/5-85-030a](#)) (1985).
- I.A.7. 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.

I.A.8. Occupational Safety and Health Administration ([OSHA](#)) Regulation “Asbestos”, 29 C.F.R. Part 1910.1001, Appendix A (OSHA 1987).

## I.B. DEFINITIONS

All terms used in this Regulation No. 8, Part B, and that are not defined below are given the same meaning as in the definitions in Regulation No. 8, Part A (section I.D.), and the common provisions regulation:

- I.B.1. [Accessible](#) when referring to [ACM](#) means that the material is subject to disturbance by [school](#) or building occupants or custodial or maintenance personnel in the course of their normal activities.
- I.B.2. [Act](#) means [C.R.S.](#) sections 25-7-101 et seq., concerning the control of asbestos.
- I.B.3. [Adequately wet](#) means sufficiently mix or penetrate with liquid to prevent the release of particulates. If [visible emissions](#) are observed coming from [asbestos-containing material](#), then that material has not been adequately wetted. However, the absence of visible emissions is not sufficient evidence of being adequately wet.
- I.B.4. [Air erosion](#) means the passage of air over [friable ACBM](#) which may result in the release of [asbestos](#) fibers.
- I.B.5. [Airlock](#) means a system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area.
- I.B.6. [Air monitoring](#) means measuring the fiber content of a known volume of air collected over a known period of time.
- I.B.7. [Air Monitoring Specialist](#) means a person who performs final visual clearance inspections or any [air monitoring](#) referred to in this regulation.
- I.B.8. [Amended water](#) means water to which a [surfactant](#) has been added.
- I.B.9. [Area of Public Access](#)
- I.B.9.a. Area of Public Access means any building, [facility](#), or property, or only that portion thereof, that any member of the general public can enter without limitation or restriction by the owner or lessee under normal business conditions; except that “Area of Public Access” includes a [single-family residential dwelling](#) and any facility that charges the general public a fee for admission such as any theater or arena. "General Public" does not include employees of the entity that owns, leases, or operates such building, facility, or property, or such portion thereof, or any service personnel or vendors connected therewith.
- I.B.9.b. Notwithstanding the provisions of section I.B.9.a., a [single-family residential dwelling](#) shall not be considered an area of public access for purposes of this

Regulation No. 8, Part B, if the homeowner who resides in the single-family residential dwelling that is the homeowner's primary residence requests, pursuant to section III.E.2., that the single-family residential dwelling not be considered an area of public access.

- I.B.10. [Asbestos](#) means asbestiform varieties of chrysotile, amosite (cummingtonite-grunerite), crocidolite, anthophyllite, tremolite, and actinolite.
- I.B.11. [Asbestos Abatement](#) means any of the following:
- I.B.11.a. The wrecking or [removal](#) of [structural members](#) that contain [friable asbestos-containing material](#);
  - I.B.11.b. The following practices intended to prevent the escape of [asbestos](#) fibers into the atmosphere:
    - I.B.11.b.(i). Coating, binding, or resurfacing of walls, ceilings, pipes, or other structures for the purpose of minimizing [friable asbestos-containing material](#) from becoming airborne;
    - I.B.11.b.(ii). Enclosing [friable asbestos-containing material](#) to make it inaccessible;
    - I.B.11.b.(iii). Removing [friable asbestos-containing material](#) from any pipe, duct, boiler, tank, reactor, furnace, or other [structural member](#).
    - I.B.11.b.(iv). Removing [facility components](#) that are asbestos covered or asbestos containing.
- I.B.12. [Asbestos Abatement Contractor](#) means any person hired to conduct [asbestos abatement](#).
- I.B.13. [Asbestos Consulting Firm](#) means any person hired for a fee to conduct any of the following activities, as required by Regulation No. 8, Part B, in the State of Colorado: asbestos building inspection and bulk sampling; development of asbestos management plans; air monitoring for asbestos fibers; development of asbestos project designs; and, project management, as specified in Section II.J.
- I.B.14. [Asbestos Laboratory](#) means any person hired for a fee to conduct asbestos analysis of bulk or air samples, as required by Regulation No. 8, Part B, in the State of Colorado.
- I.B.15. [Asbestos Training Provider](#) means any person who puts on training courses in any of the following asbestos disciplines in the State of Colorado: Worker, Supervisor, Project Designer, Building Inspector, Management Planner or Air Monitoring Specialist.
- I.B.16. [Asbestos-containing building material](#) 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](#) or [state building](#).

- I.B.17. [Asbestos-containing material](#) means material containing more than 1% [asbestos](#).
- I.B.18. [Asbestos-containing waste material](#) means mill tailings or any waste that contains [commercial asbestos](#) and is generated by a source subject to the provisions of this Regulation. This term includes, but is not limited to, asbestos waste from control devices, [friable asbestos-containing waste material](#), disposable equipment and clothing, and bags or other similar packaging contaminated with commercial asbestos.
- I.B.19. [Asbestos debris](#) means pieces of [ACM](#) that can be identified by color, texture, or composition, or means dust, if the dust is determined by a [certified](#) Inspector to be ACM.
- I.B.20. [Asbestos mill](#) means any [facility](#) engaged in converting, or in any intermediate step in converting, [asbestos](#) ore into [commercial asbestos](#). Outside storage of [asbestos-containing material](#) is not considered a part of the asbestos mill.
- I.B.21. [Asbestos spill](#) means any release of [asbestos](#) fibers due to a breach of the containment barrier on an abatement project, or due to any cause other than [asbestos abatement](#).
- I.B.22. [Asbestos tailings](#) mean any solid waste that contains asbestos and is a product of asbestos mining or milling operation.
- I.B.23. [Assessment](#), when used in reference to [ACM](#) in a state building, means any evaluation of ACM, or suspected ACM, which determines the need for a [response action](#).
- I.B.24. [Category I nonfriable asbestos-containing material](#) means asbestos-containing packings, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent [asbestos](#) as determined using the method specified in Appendix E, Subpart E, 40 C.F.R. Part 763, section 1, [polarized light microscopy](#) (EPA 1995).
- I.B.25. [Category II nonfriable ACM](#) means any material, excluding [category I nonfriable ACM](#), containing more than 1 percent [asbestos](#) as determined using the methods specified in Appendix E, Subpart E, 40 C.F.R. Part 763, section 1, [polarized light microscopy](#), (EPA 1995) that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
- I.B.26. [Certified](#) means holding a certificate issued pursuant to this regulation.
- I.B.27. [Certified Industrial Hygienist](#) means an individual who has been certified by the [American Board of Industrial Hygiene](#) to practice as a [CIH](#).
- I.B.28. [Clean Room](#) means an uncontaminated area or room, which is a part of the Worker [decontamination enclosure system](#) with provisions for storage of Workers' street clothes and clean protective equipment.

- I.B.29. [Commercial asbestos](#) means any material containing [asbestos](#) that is extracted from ore and has value because of its asbestos content.
- I.B.30. [Commission](#) means the Colorado Air Quality Control Commission.
- I.B.31. [Critical Barrier](#) means a single layer of 6-mil or greater polyethylene sheeting or an equivalent airtight barrier installed initially over all doors, windows, ventilation openings, drains, wall penetrations, etc., as an additional measure to prevent contaminated air from escaping the [work area](#).
- I.B.32. [Curtained Doorway](#) means a device to allow ingress or egress from one room to another while permitting minimal air movement between the rooms.
- I.B.33. [Cutting](#) means to penetrate with a sharp-edged instrument and includes sawing, but does not include shearing, slicing, or punching.
- I.B.34. [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.
- I.B.35. [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.
- I.B.36. [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, water-stained, 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.

- I.B.37. [Decontamination enclosure system](#) means a series of three (minimum) connected rooms, separated from the [work area](#) and from each other by air locks or [curtained doorways](#), for the decontamination of Workers and equipment.
- I.B.38. [Demolition](#) means 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.
- I.B.39. [Division](#) means the Colorado Air Pollution Control Division.
- I.B.40. [Emergency](#) means an unexpected situation or sudden occurrence of a serious and urgent nature that demands immediate action and that constitutes a threat to life, health or that may cause major damage to property. Delay of a contract does not constitute an emergency, nor are [demolition](#) projects emergencies.
- I.B.41. [Encapsulation](#) means application of a liquid material to asbestos-containing material which controls the possible release of [asbestos](#) fibers from the material either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components together (penetrating encapsulant).
- I.B.42. [Enclosure](#) means an airtight, impermeable, permanent barrier around [ACM](#) to minimize the release of [asbestos](#) fibers into the air.
- I.B.43. [Equipment room](#) means a contaminated area or room, which is part of the Worker [decontamination enclosure system](#) with provisions for storage of contaminated clothing and equipment.
- I.B.44. [Fabricating](#) means any processing (e.g., [cutting](#), sawing, drilling) of a manufactured product that contains [commercial asbestos](#), with the exception of processing at temporary sites (field fabricating) for the construction or restoration of facilities. In the case of friction products, fabricating includes bonding, rebonding, [grinding](#), sawing, drilling, or other similar operations performed as part of fabricating.
- I.B.45. [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 the 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.
- I.B.46. [Facility component](#) means any part of a [facility](#) including equipment.
- I.B.47. [Fiber release episode](#) means any uncontrolled or unintentional disturbance of [ACM](#) resulting in [visible emissions](#).

- I.B.48. [Final cleaning](#) means the cleaning of all dust and debris from the [work area](#) near the end of the active abatement phase, immediately prior to the final visual inspection.
- I.B.49. [Fixed object](#) means a piece of equipment or furniture in the [work area](#), which cannot be readily removed from the work area.
- I.B.50. [Friable](#) 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.
- I.B.51. [Friable asbestos containing material](#) means any material that contains [asbestos](#) and when dry can be crumbled, pulverized, or reduced to powder by hand pressure and that contains more than one percent asbestos by weight, area or volume. The term includes nonfriable forms of asbestos after such previously nonfriable material becomes damaged to the extent that when dry it can be crumbled, pulverized, or reduced to powder by hand pressure.
- I.B.52. [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 a classroom(s), a cafeteria, gymnasium, hallways, designated by a person [certified](#) to prepare management plans, design abatement projects, or conduct [response actions](#).
- I.B.53. [Glovebag](#) means a manufactured or fabricated device, typically constructed of six mil transparent polyethylene or polyvinylchloride plastic, consisting of two inward projecting long sleeves with attached gloves, an internal tool pouch, and an attached, labeled receptacle for asbestos waste.
- I.B.54. [Grinding](#) means to reduce to powder or small fragments and includes mechanical chipping or drilling.
- I.B.55. [HEPA filtration](#) means a filtering system capable of trapping and retaining at least 99.97 percent of all monodispersed particles 0.3 microns in diameter or larger.
- I.B.56. [HEPA vacuum](#) means a vacuum system approved by the manufacturer for use in asbestos applications equipped with [HEPA filtration](#).
- I.B.57. [Homogeneous area](#) means an area of [surfacing material](#), [thermal system insulation](#) material, or [miscellaneous material](#) that is uniform in color and texture.
- I.B.58. [Independent](#) means that a [person](#) is not an employee, agent, representative, partner, joint venture, shareholder, parent or subsidiary company of another person.
- I.B.59. [Large contiguous facility complex](#) means a complex that has a single owner and have 3 or more buildings on a single property or adjoining properties.
- I.B.60. [Local education agency](#) (LEA) means:

- I.B.60.a. Any local educational agency as defined in section 198 of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 3381).
- I.B.60.b. The owner or operator of any nonpublic, nonprofit, elementary, or secondary [school building](#).
- I.B.60.c. The governing authority of any [school building](#) operated under the Defense Department's education system provided for under the Defense Department's Education Act of 1978 (20 U.S.C. 921, et seq.).
- I.B.61. [Manufacturing](#) means the combining of [commercial asbestos](#) – or, in the case of woven friction products, the combining of textiles containing commercial asbestos – with any other material(s), including commercial asbestos, and the processing of this combination into a product. Chlorine production is considered a part of manufacturing.
- I.B.62. [Mini-enclosure](#) means any containment barrier small enough to restrict entry to the [asbestos work area](#) to no more than two Workers, constructed around an area where small-scale, short-duration [asbestos abatement](#) is to be performed.
- I.B.63. [Miscellaneous ACM](#) means [miscellaneous material](#) that is [ACM](#).
- I.B.64. [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](#).
- I.B.65. [Movable objects](#) means pieces of equipment or furniture in the [work area](#), which can be readily removed from the work area.
- I.B.66. [Negative pressure ventilation system](#) means portable exhaust systems equipped with [HEPA filtration](#) and capable of maintaining a constant high velocity air flow out of the contaminated area, resulting in a constant low velocity air flow into contaminated areas from adjacent uncontaminated areas.
- I.B.67. [Nonfriable](#) means material which, when dry, may not be crumbled, pulverized, or reduced to powder by hand pressure.
- I.B.68. [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.
- I.B.69. [Particulate asbestos material](#) means finely divided particles of [asbestos](#) or material containing asbestos.
- I.B.70. [Person](#) means any individual, any public or private corporation, partnership, association, firm, trust, or estate, the state or any department, institution, or agency thereof, any municipal corporation, county, city and county, or other political

subdivision of the state, or any other legal entity, which is recognized by law as the subject of rights and duties.

- I.B.71. [Phase Contrast Microscopy](#) is an analytical technique used for the counting of fibers on a filter of an air sample. This technique is not specific for [asbestos](#).
- I.B.72. [Polarized Light Microscopy](#) is an analytical technique used for identifying types of [asbestos](#) fibers in bulk material samples.
- I.B.73. [Porous](#) means capable of trapping, retaining or holding [asbestos](#) fibers even during aggressive cleaning methods such as wet washing, wiping and [HEPA vacuuming](#).
- I.B.74. [Potential damage](#) means circumstances in which:
- I.B.74.a. [Friable ACBM](#) is in an area regularly used by building occupants including maintenance personnel, in the course of their normal activities.
  - I.B.74.b. 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.
- I.B.75. [Potential significant damage](#) means circumstances in which:
- I.B.75.a. [Friable ACBM](#) is in an area regularly used by building occupants, including maintenance personnel, in the course of their normal activities.
  - I.B.75.b. 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.
  - I.B.75.c. 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](#).
- I.B.76. [Pre-cleaning](#) means the cleaning of the [work area](#) of visible dust and debris prior to active abatement.
- I.B.77. [Preventive measures](#) means actions taken to reduce disturbance of [ACBM](#) or otherwise eliminate the reasonable likelihood of the materials becoming damaged or significantly damaged.
- I.B.78. [Project Design](#) means plans, specifications, project procedures, containment design/placement, descriptions of engineering controls, and shop drawings for an [asbestos abatement](#) project or [response action](#).
- I.B.79. [Public and Commercial Building](#) means any building, which is not a [school building](#), except that the term does not include any residential apartment building of ten or

fewer units. [Single-family residential dwellings](#) are excluded from this definition. This definition includes all industrial buildings.

- I.B.80. [Regulated asbestos-containing material](#) means (a) [friable asbestos-containing material](#), (b) [Category I nonfriable ACM](#) that has become [friable](#), (c) [Category I nonfriable ACM](#) that will be or has been subjected to sanding, [grinding](#), [cutting](#), or abrading or (d) [Category II nonfriable ACM](#) that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of [demolition](#) or [renovation](#) operations regulated by this regulation.
- I.B.81. [Removal](#) means the taking out or the [stripping](#) of [ACBM](#) from a damaged area, a [functional space](#), or a [homogeneous area](#) in a building.
- I.B.82. [Renovation](#) means altering in any way one or more [facility](#) components. Operations in which load-supporting [structural members](#) are wrecked or taken out are excluded. Examples of [renovation](#) work include replacement or [repair](#) of mechanical ventilation systems, pipes, ceilings, walls, flooring (including floor tiles) and insulating materials.
- I.B.83. [Repair](#) means returning damaged [ACBM](#) to an undamaged condition or to an intact state so as to prevent fiber release.
- I.B.84. [Resilient Floor Tile](#) means tile, which may include vinyl [asbestos](#) tile ([VAT](#)), asphalt tile, and rubber tile. Tile often appears as 9" x 9" or 12" x 12" floor tile squares. This material may be found in [schools](#), offices and residential applications. Not all resilient floor tile contains [asbestos](#).
- I.B.85. [Response action](#) means a method, including [removal](#), [encapsulation](#), [enclosure](#), [repair](#), [operations and maintenance](#), that protects human health and the environment from [friable ACM](#).
- I.B.86. [Roadways](#) mean surfaces on which vehicles travel. This term includes public and private highways, roads, streets, parking areas, and driveways.
- I.B.87. [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.
- I.B.88. [Sampling Area](#) means any area, whether contiguous or not, within a building which contains [friable](#) material that is homogeneous.
- I.B.89. [School](#) means any institution that provides elementary or secondary education.
- I.B.90. [School building](#) means:

- I.B.90.a. 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.
- I.B.90.b. Any gymnasium or other facility, which is specially designed for athletic or recreational activities for an academic course in physical education.
- I.B.90.c. Any other facility used for the instruction or housing of students or for the administration of educational or research programs.
- I.B.90.d. Any maintenance, storage, or utility facility, including any hallway, essential to the operation of any facility described in this definition of “[school building](#)” under subparagraphs I.B.87.a, b, or c.
- I.B.90.e. Any portico or covered exterior hallway or walkway of any facility described in this definition of “[school building](#)” in subparagraphs I.B.87.a, b, c, or d.
- I.B.90.f. Any exterior portion of a mechanical system used to condition interior space of any facility described in this definition of “[school building](#)” in subparagraphs I.B.87.a, b, c, or d.
- I.B.91. [Secondary Containment](#) means a system of airtight barriers to isolate the [work area](#) to prevent the migration of air from the work area.
- I.B.92. [Sheet Vinyl Flooring](#) means material that is usually found in 6 ft., 9 ft., and 12 ft., width sheets. It often consists of three or more laminated layers. The upper layers are comprised of a wear layer and design feature. The bottom layer may be an [asbestos-containing](#) backing, which may be grayish-white in color. Sheet vinyl flooring may be installed in an adhered or loose-laid manner. Other possible applications for this material include countertops and wall coverings. Not all sheet vinyl flooring has an asbestos-containing backing.
- I.B.93. [Shower room](#) means a room between the [clean room](#) and the [equipment room](#) in the Worker [decontamination enclosure](#) suitably arranged for complete showering during decontamination.
- I.B.94. [Significantly damaged friable miscellaneous ACM](#) means damaged [friable](#) miscellaneous [ACM](#) where the damage is extensive and severe.
- I.B.95. [Significantly damaged friable surfacing ACM](#) means damaged [friable surfacing ACM](#) in a [functional space](#) where the damage is extensive and severe.
- I.B.96. [Single-family residential dwelling](#) or unit means any structure or portion of a structure whose primary use is for housing of one family. Residential portions of multi-unit dwellings such as apartment buildings, condominiums, duplexes and triplexes are also considered to be, for the purposes of this Regulation No. 8, single-family residential dwellings; common areas such as hallways, entryways, and boiler rooms are not single-family residential dwellings.

- I.B.97. [Staging area](#) means either the holding area or an area near the waste transfer [airlock](#) where containerized asbestos waste has been placed prior to removal from the [work area](#).
- I.B.98. [State-owned or state-leased buildings](#) means structures occupied by any [person](#) which are either owned by the state or utilized by the state through leases of one year's duration or longer.
- I.B.99. [Strip](#) means to take off [RACM](#) from any part of a [facility](#) or [facility components](#).
- I.B.100. [Structural member](#) means any load-supporting member of a facility, such as beams and load supporting walls; or any non load-supporting member, such as ceilings and non load-supporting walls.
- I.B.101. [Surfacing ACM](#) means [surfacing material](#) that is [ACM](#).
- I.B.102. [Surfacing material](#) means material 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.
- I.B.103. [Surfactant](#) means a chemical wetting agent added to water to improve penetration.
- I.B.104. [Thermal system insulation](#) means material 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.
- I.B.105. [Thermal system insulation ACM](#) means [thermal system insulation](#) that is [ACM](#).
- I.B.106. [Transmission Electron Microscopy](#) is an analytical technique used for the definitive identification of [asbestos](#). This technique can be used for both air and bulks sample analyses.
- I.B.107. [Trigger levels](#) means amounts of material as follows:
- I.B.107.a. With regard to [single-family residential dwellings](#), the trigger levels are 50 linear feet on pipes, 32 square feet on other surfaces, or the volume equivalent of a 55-gallon drum.
- I.B.107.b. With regard to all areas other than single-family residential dwellings, the trigger levels are 260 linear feet on pipes, 160 square feet on other surfaces, or the volume equivalent of a 55-gallon drum.
- I.B.108. [Vibration](#) means the periodic motion of [friable ACM](#), which may result in the release of [asbestos](#) fibers.
- I.B.109. [Visible emissions](#) means any emissions, which are visually detectable without the aid of instruments, coming from asbestos containing material or [asbestos-containing waste material](#).

- I.B.110. [Waste load-out area](#) means a specially constructed [airlock](#) system utilized as a short-term storage area for bagged or barreled waste and as a port for transferring waste to the transport vehicle. This area is separate from the [decontamination unit](#).
- I.B.111. [Wet cleaning](#) means eliminating [asbestos](#) contamination from building surfaces and objects by using cloths, mops, or other cleaning utensils, which have been dampened with [amended water](#).
- I.B.112. [Work area](#) means a room, group of rooms, or contiguous area sealed or contained by polyethylene barriers and/or walls for the purpose of eliminating air exchange between another room, group of rooms, or contiguous areas.
- I.B.113. [Working day](#) means Monday through Friday and including holidays that fall on any of the days Monday through Friday.

I.C. ACRONYMS

- I.C.1. [ABIH](#) American Board of Industrial Hygiene  
6015 West St. Joseph, Suite 102, Lansing, MI 48917-3980
- I.C.2. [ACBM](#) [asbestos-containing building material](#)
- I.C.3. [ACGIH](#) American Conference of Governmental Industrial Hygienists  
1300 Kemper Meadow Drive, Cincinnati, OH 45240
- I.C.4. [ACM](#) [asbestos-containing material](#)
- I.C.5. [ACWM](#) [asbestos-containing waste material](#)
- I.C.6. [AHERA](#) Asbestos Hazard Emergency Response Act
- I.C.7. [AIHA](#) American Industrial Hygiene Association  
2700 Prosperity Avenue, Suite 250, Fairfax, VA 22031
- I.C.8. [AMS](#) Air Monitoring Specialist
- I.C.9. [ANSI](#) American National Standards Institute  
1819 L Street, NW, Suite 600, Washington, DC 20036
- I.C.10. [APCD](#) Air Pollution Control Division
- I.C.11. [ASHARA](#) Asbestos School Hazard Abatement Reauthorization Act
- I.C.12. [ASTM](#) American Society for Testing and Materials  
100 Barr Harbor Drive, West Conshohocken, PA 19428-2959
- I.C.13. [AQCC](#) Air Quality Control Commission
- I.C.14. [CCR](#) Code of Colorado Regulations

I.C.15.	<a href="#">CDPHE</a>	Colorado Department of Public Health and Environment
I.C.16.	<a href="#">CFM</a>	cubic feet per minute
I.C.17.	<a href="#">CFR</a>	Code of Federal Regulations
I.C.18.	<a href="#">CIH</a>	Certified Industrial Hygienist
I.C.19.	<a href="#">C.R.S.</a>	Colorado Revised Statutes
I.C.20.	<a href="#">EPA</a>	Environmental Protection Agency Ariel Rios Building, 1200 Pennsylvania Avenue, N.W., Washington, DC 20460
I.C.21.	<a href="#">f/cc</a>	fibers per cubic centimeter
I.C.22.	<a href="#">f/cm<sup>3</sup></a>	fibers per cubic centimeter
I.C.23.	<a href="#">f/m<sup>3</sup></a>	fibers per cubic meter
I.C.24.	<a href="#">GAC</a>	General Abatement Contractor
I.C.25.	<a href="#">G.E.D.</a>	General Equivalency Diploma
I.C.26.	<a href="#">HEPA</a>	high efficiency particulate air
I.C.27.	<a href="#">HVAC</a>	heating, ventilation and air conditioning
I.C.28.	<a href="#">LCF</a>	<a href="#">large contiguous facility [complex]</a>
I.C.29.	<a href="#">LEA</a>	<a href="#">local education agency</a>
I.C.30.	<a href="#">LPM</a>	liters per minute
I.C.31.	<a href="#">MAAL</a>	Maximum Allowable Asbestos Level in air
I.C.32.	<a href="#">MAP</a>	Model Accreditation Plan ( <a href="#">EPA</a> )
I.C.33.	<a href="#">NAM</a>	negative air machine
I.C.34.	<a href="#">NBS</a>	National Bureau of Standards
I.C.35.	<a href="#">NESHAP</a>	National Emissions Standards for Hazardous Air Pollutants (40 C.F.R. Part 61) ( <a href="#">EPA</a> ), Subparts A (General Provisions), and M (National Emission Standard for Asbestos)
I.C.36.	<a href="#">NIOSH</a>	National Institute for Occupational Safety and Health Hubert H. Humphrey Bldg., 200 Independence Ave., SW, Room 715H, Washington, DC 20201

I.C.37.	<a href="#"><u>NIST</u></a>	National Institute of Standards and Technology 100 Bureau Drive, Stop 3460, Gaithersburg, MD 20899-3460
I.C.38.	<a href="#"><u>NVLAP</u></a>	National Voluntary Laboratory Accreditation Program National Institute of Standards and Technology 100 Bureau Drive, MS 2140 Gaithersburg, Maryland 20899-2140
I.C.39.	<a href="#"><u>O&amp;M</u></a>	Operations and Maintenance
I.C.40.	<a href="#"><u>OSHA</u></a>	Occupational Safety and Health Administration 200 Constitution Avenue, Washington, D.C. 20210
I.C.41.	<a href="#"><u>PAT</u></a>	Proficiency Analytical Testing
I.C.42.	<a href="#"><u>PCM</u></a>	<a href="#"><u>Phase Contrast Microscopy</u></a>
I.C.43.	<a href="#"><u>PLM</u></a>	<a href="#"><u>Polarized Light Microscopy</u></a>
I.C.44.	<a href="#"><u>PPE</u></a>	personal protective equipment
I.C.45.	<a href="#"><u>PSI</u></a>	pounds per square inch
I.C.46.	<a href="#"><u>RACM</u></a>	<a href="#"><u>regulated asbestos-containing material</u></a>
I.C.47.	<a href="#"><u>RFCI</u></a>	Resilient Floor Covering Institute 401 E. Jefferson Street, Suite 102, Rockville, MD. 20850
I.C.48.	<a href="#"><u>s/mm<sup>2</sup></u></a>	structures per square millimeter
I.C.49.	<a href="#"><u>SFRD</u></a>	<a href="#"><u>single-family residential dwelling</u></a>
I.C.50.	<a href="#"><u>TEM</u></a>	<a href="#"><u>Transmission Election Microscopy</u></a>
I.C.51.	<a href="#"><u>TSCA</u></a>	Toxic Substances Control Act 15 U.S.C. section 2601 <i>et seq.</i> TSCA TITLE II means the 1986 amendments to TSCA found at 15 U.S.C. section 2641 <i>et seq.</i>
I.C.52.	<a href="#"><u>TSI</u></a>	thermal system insulation
I.C.53.	<a href="#"><u>TWA</u></a>	time weighted average
I.C.54.	<a href="#"><u>VAT</u></a>	vinyl asbestos [floor] tile
I.C.55.	<a href="#"><u>VCT</u></a>	vinyl composition tile

All underlined text in this regulation indicates defined terms; clicking on underlined text will take you to its definition in Section I.

## **II. CERTIFICATION REQUIREMENTS**

### **II.A. GENERAL REQUIREMENTS**

II.A.1. Persons required to be certified as a General Abatement Contractor, Building Inspector, Management Planner, Project Designer, Abatement Worker, Abatement Supervisor or Air Monitoring Specialist shall obtain the appropriate certification from the Division in accordance with this Section II.

#### II.A.2. Photo IDs and Certificates

Each individual certified under this regulation must have their state certification photo identification (ID) card or state certificate available at each work site so that Division representatives may check their credentials.

Each individual trained under this regulation must have copies of their training and refresher certificates available at each work site so that Division representatives may check their credentials.

#### II.A.3. Non-Public Access Areas

Any person certified under this regulation to work solely on asbestos abatement projects in non-public access areas shall not be required to pay the application fee. Certificates issued under this paragraph are not valid for abatement in areas of public access, and are not transferable.

#### II.A.4. Ownership of Training Certificates

Training certificates are considered to be the property of the accredited individual. Training providers must give duplicate original training certificates to the accredited individual upon request. Training providers may charge a reasonable fee for replacement of training certificates.

#### II.A.5. Falsification of Training Certificates

Falsification of training certificates or licenses used to obtain state certification is considered to be a violation of these regulations, and shall be sufficient reason for the denial of an application for certification, and may result in disciplinary action being taken against an applicant submitting such falsified training certificates or licenses.

II.A.6. An individual may hold more than one certification.

II.B. GENERAL ABATEMENT CONTRACTOR CERTIFICATES

II.B.1. Certificate Duration

General Abatement Contractor ([GAC](#)) certificates are valid for a period of one, two or three years.

II.B.2. Application Procedures

A [person](#) applying for a General Abatement Contractor ([GAC](#)) certificate, renewal of existing certification or reinstatement of expired certification shall submit an application on a form specified by the [Division](#) and, except as provided in paragraph II.A.3 (Non-Public Access Areas) above, pay the applicable fee as specified in the table below:

Certification	Amount		
	1 year	2 years	3 years
GAC	\$2,000.00	N/A	N/A
GAC (renewal)	\$1,000.00	\$2,000.00	\$3,000.00
Out of State (initial)	\$3,000.00	N/A	N/A
Out of State (renewal)	\$2,000.00	\$4,000.00	\$6,000.00

II.B.3. Training Requirements

No training is required for [GACs](#).

II.B.4. GAC Responsibilities

[GACs](#) shall ensure that all Workers and Supervisors are appropriately [certified](#) in accordance with this Section II (Certification Requirements). The GAC must ensure that it employs at least one Colorado state-certified Supervisor who must be on-site at all times when abatement work is proceeding.

II.C. WORKER, SUPERVISOR, BUILDING INSPECTOR, MANAGEMENT PLANNER, PROJECT DESIGNER CERTIFICATES

II.C.1. Certificate Duration

Worker, Supervisor, Building Inspector, Management Planner, and Project Designer certificates will be issued for a period of one, three, or five years and will be valid only while the provisions of sections II.C.3 (Training Requirements), II.C.4 (Examinations) and II.C.5 (Refresher Training Requirements) are met.

II.C.2. Application Procedures

Anyone applying for a Worker, Supervisor, Building Inspector, Management Planner, or Project Designer certificate, renewal of an existing certificate or reinstatement of

an expired certificate shall submit an application on a form specified by the [Division](#) and, except as provided in paragraph II.A.3 (Non-Public Access Areas) above, pay the applicable fee as specified in the table below:

Certification	Amount		
	1 year	3 years	5 years
Worker	\$125.00	\$375.00	\$625.00
Supervisor	\$250.00	\$750.00	\$1250.00
Building Inspector	\$175.00	\$525.00	\$875.00
Management Planner	\$175.00	\$525.00	\$875.00
Project Designer	\$250.00	\$750.00	\$1250.00

### II.C.3. Training Requirements

Each individual seeking certification as a Worker, Supervisor, Building Inspector, Management Planner or Project Designer shall complete [Division](#)-approved training.

### II.C.4. Examinations

An individual seeking certification, renewal of an existing certificate or reinstatement of an expired certificate in a specific discipline shall pass, on an annual basis, a [Division](#)-administered closed book examination for that discipline. Each examination shall cover the topics included in the training course for that discipline. The testing schedule and procedures shall be determined by the Division.

If an applicant fails to achieve a passing score on a certification exam, he or she may retake the exam after submitting the following items to the Division:

- a new application including payment of a retesting fee of \$125.00; and
- proof of attendance at a remedial training course, if required by the Division.

### II.C.5. Refresher Training Requirements

II.C.5.a. Workers, Supervisors, Building Inspectors, Management Planners or Project Designers who are [certified](#) according to this regulation must take an annual refresher training course from a [Division](#)-approved training provider. Prior to the commencement of refresher training, the course provider is required to verify the authenticity of the initial training course certificate and all refresher training certificates. Individuals not in possession of a valid training certificate shall not be given refresher training.

Applicants are ineligible for refresher training if their most recent training certificate has lapsed for a year or longer, in which case the applicant must re-take the initial training. During the period in which the individual's training certificate has expired, the state certificate is not valid. State certification becomes valid once the required training has been completed and state certification requirements have been met.

II.C.5.b. The length of annual refresher courses shall be as follows:

Certification	Length
Worker	One full day (Eight (8) hours)
Supervisor	One full day (Eight (8) hours)
Project Designer	One full day (Eight (8) hours)
Building Inspector	One half day (Four (4) hours)
Management Planner	One half day Building Inspector and one half day Management Planner

II.C.5.c. All courses, at a minimum, must cover the following topics:

- Changes in Federal and State laws, regulations and requirements;
- Developments and/or changes in state-of-the-art procedures;
- Review of the key aspects of the course; and
- Pertinent developments in the particular discipline or the industry as a whole.

Testing of applicants to determine knowledge gained in the refresher course may be done at the option of the course provider.

II.C.6. Combined Certificates

At the request of the applicant, the [Division](#) may issue a combined Supervisor/Project Designer or combined Inspector/Management Planner certificate. The applicant shall submit an application on a form specified by the Division and, except as provided in paragraph II.A.3 (Non-Public Access Areas) above, pay the applicable fee as specified in the table below:

Certification	Amount		
	1 year	3 years	5 years
Supervisor/ Project Designer	\$275.00	\$825.00	\$1375.00
Building Inspector/ Management Planner	\$275.00	\$825.00	\$1375.00

II.D. AIR MONITORING SPECIALIST CERTIFICATES

Effective March 30, 2004, any Individual who performs a final visual inspection or performs any [air monitoring](#) referred to in this regulation must be [certified](#) as an [Air Monitoring Specialist \(AMS\)](#).

Until this provision for certification becomes effective, all activities required to be performed by a [certified Air Monitoring Specialist](#) as stated in this regulation may only be performed by an individual who qualified as an Air Monitoring Specialist under the previous regulation prior to March 30, 2003.

II.D.1. Certificate Duration

[Air Monitoring Specialist \(AMS\)](#) certificates will be issued for a period of one, three, or five years and will be valid only while the Training (II.D.3.a.i and II.D.3.b.i) and Examination (II.D.3.a.iv. and II.D.3.b.iv) requirements are met.

II.D.2. Application Procedures

Anyone applying for an [Air Monitoring Specialist](#) certificate, renewal of existing certification or reinstatement of an expired certificate shall submit an application on a form specified by the [Division](#) and, except as specified in paragraph II.A.3 (Non-Public Access Areas) above, pay the applicable fee as specified in the table below:

Certification	Amount		
	1 year	3 years	5 years
Air Monitoring Specialist	\$250.00	\$750.00	\$1250.00

II.D.3. Initial Certification Requirements

II.D.3.a. New AMS Applicants

Each Individual seeking certification as an [Air Monitoring Specialist](#) shall satisfy the training, experience and education requirements set forth below, unless granted certification based on prior training, experience and education pursuant to section II.D.3.b.:

II.D.3.a.(i). Training

Each individual seeking certification as an [Air Monitoring Specialist](#) shall successfully complete a [Division](#)-approved Air Monitoring Specialist course. An individual [certified](#) by the American Board of Industrial Hygiene as a Certified Industrial Hygienist ([CIH](#)) is not required to attend those portions of the Air Monitoring Specialist course that instruct students exclusively on [air monitoring](#) techniques (e.g., pump calibration, cassette placement, cassette handling, etc.).

II.D.3.a.(i).(A). All initial courses required under this Section II.D.3.a. (New [AMS](#) Applicants), shall, at a minimum, cover the following topics:

- Roles and responsibilities of an AMS
- Characteristics of asbestos and asbestos-containing materials
- Federal and state laws, regulations and requirements
- Understanding building construction and building systems
- Asbestos abatement contracts, specification and drawings
- Response Actions and abatement practices
- Asbestos abatement equipment
- Personal protective equipment

- Air monitoring strategies
- Safety and Health issues other than asbestos-containing material
- Conducting visual inspections
- Legal responsibilities and liabilities of an AMS
- Record keeping and report writing
- Hands-on activities

the course provider shall test the applicants to determine knowledge gained in the course.

II.D.3.a.(ii). Experience

Each individual seeking certification as an [Air Monitoring Specialist](#) shall perform the following on-the-job training activities prior to becoming [certified](#):

- II.D.3.a.(ii).(A). Under the observation of a certified Air Monitoring Specialist, participate in a minimum of 2 final visual inspections and 2 final air clearances.
- II.D.3.a.(ii).(B). Under the supervision of a certified Air Monitoring Specialist, successfully perform a minimum of 80 hours of ambient [air monitoring](#).
- II.D.3.a.(ii).(C). The Air Monitoring Specialist applicant shall provide documentation of this experience on a form specified by the [Division](#). The form shall not be complete until signed by the certified Air Monitoring Specialist(s) who supervised and observed the training. This form shall be submitted to the Division at the time of application for certification.

II.D.3.a.(iii). Education

Anyone seeking certification as an [Air Monitoring Specialist](#) shall possess a high school diploma or General Equivalency Diploma ([G.E.D.](#)).

II.D.3.a.(iv). Examination

Each individual seeking certification as an Air Monitoring Specialist shall pass, on an annual basis, a Division-administered closed book written examination. The examination shall cover the topics included in the training course. The testing schedule and procedures shall be determined by the Division. If an applicant fails to achieve a passing score on a certification test, he or she may retake the test after submitting the following items to the Division:

- 1) a new application including payment of a retesting fee of \$125.00; and
- 2) proof of attendance at a remedial training course, if required by the Division.

The Air Monitoring Specialist applicant must pass the written examination in order to become certified as an AMS.

II.D.3.a.(v). Permissible Activities for AMS Applicants

Any individual seeking certification as an [Air Monitoring Specialist](#), who does not yet meet all the requirements for certification, may perform the following activities prior to becoming [certified](#):

II.D.3.a.(v).(A). Air Monitoring

Under the supervision of a [certified Air Monitoring Specialist](#), an individual attempting to obtain the necessary experience to fulfill the Air Monitoring Specialist requirements may collect ambient [air monitoring](#) samples on behalf of a certified Air Monitoring Specialist to determine compliance with section III.U.1. (Maximum Allowable Asbestos Level). The certified Air Monitoring Specialist overseeing the sampling is, however, responsible for compliance with section III.U.1. (Maximum Allowable Asbestos Level).

II.D.3.a.(v).(B). Final Visual Inspection and Final Air Clearance

Under the observation of a [certified Air Monitoring Specialist](#), anyone attempting to obtain the necessary experience to fulfill the Air Monitoring Specialist requirements may participate in final visual inspections and Final Clearance Air Monitoring along with the certified Air Monitoring Specialist. The certified Air Monitoring Specialist is still responsible for performing all of the required clearance activities specified in section III.P. (Clearing Abatement Projects).

II.D.3.b. Existing AMS Applicants

Any individual who was qualified as an [Air Monitoring Specialist](#) prior to March 30, 2003 shall be deemed to have met the training, experience and education requirements for an Air Monitoring Specialist and shall be eligible for certification as an Air Monitoring Specialist upon completion of the following procedures. Each individual seeking certification as an Air Monitoring Specialist under this paragraph must complete the following items:

II.D.3.b.(i). Training

The applicant must complete a [Division](#)-approved 4-hour [Air Monitoring Specialist](#) refresher course.

II.D.3.b.(ii). Experience

No additional experience is required, but the individual must submit an application for certification as provided for in paragraph II.D.2. no later than June 30, 2003.

II.D.3.b.(iii). Education

There are no education requirements for individuals qualified prior to March 30, 2003.

II.D.3.b.(iv). Examination

Each individual seeking certification as an Air Monitoring Specialist shall pass, on an annual basis, a Division-administered closed book written examination. The examination shall cover the topics included in the training course. The testing schedule and procedures shall be determined by the Division. If an applicant fails to achieve a passing score on a certification test, he or she may retake the test after submitting the following items to the Division:

- 1) a new application including payment of a retesting fee of \$125.00; and
- 2) proof of attendance at a remedial training course, if required by the Division.

II.D.4. Recertification Requirements

II.D.4.a. [Air Monitoring Specialists](#) who are [certified](#) according to this regulation must take an annual refresher training course from a [Division](#)-approved training provider. Prior to the commencement of refresher training, the course provider is required to verify the authenticity of the initial training course certificate and all refresher training certificates. Individuals not in possession of a valid training certificate shall not be given refresher training. The length of the Air Monitoring Specialist refresher course shall be one-half day (four (4) hours).

Applicants are ineligible for refresher training if their most recent training certificate has lapsed for a year or longer, in which case the applicant must re-take the initial training. During the period in which the individual's training certificate has expired, the state certificate is not valid. State certification becomes valid once the required training has been completed and state certification requirements have been met.

II.D.4.b. All refresher courses required under this Section II.D.4. (Recertification Requirements), at a minimum, must cover the following topics:

- Changes in Federal and State laws, regulations and requirements;
- Developments and/or changes in state-of-the-art procedures;
- Review of the key aspects of the course; and
- Pertinent developments in the particular discipline or the industry as a whole.

Testing of applicants to determine knowledge gained in the refresher course may be done at the option of the course provider.

## II.E. TRAINING PROVIDER APPLICATION PROCEDURES

- II.E.1. Any [person](#) wishing to offer courses in disciplines for which training or certification is required must be registered as an Asbestos Training Provider. Applicants shall apply to the [Division](#) for approval, except for the training referenced in Appendix C. Applicants seeking approval for initial training or refresher training courses shall submit their request to the Division on a form supplied by the Division along with the written course materials and a fee of \$250.00 per discipline in which they wish to offer courses.
- II.E.1.a. After the initial course approval, applicants shall submit their renewal request to the Division on a form supplied by the Division along with a fee of \$100.00 per discipline in which they wish to offer courses.
- II.E.2. In order for a course to be approved it must adequately address the topics and format contained in the United States Environmental Protection Agency's Asbestos Model Accreditation Plan (MAP), 40 C.F.R. Part 763 (1994), Subpart E, Appendix C. The [Commission](#) recommends the use of audiovisual materials to complement lectures in these courses, where appropriate.
- II.E.3. After reviewing the application for course approval, the [Division](#) shall inform the applicant in writing whether the course is approved for use in Colorado or if changes must be made in the application before approval may be granted.
- II.E.4. Once the applicant has been informed that the course is approved, the course is considered to have contingent approval, and the applicant may begin offering courses in the State. Final approval of the course will not be granted until the [Division](#) has audited the course and determined that the course meets the requirements of this regulation.
- II.E.5. After contingent approval has been granted by the [Division](#), the applicant must make application, if necessary, with the Department of Higher Education, Division of Private Occupation Schools (DHE/DPOS), for approval as an occupational education course. Failure to follow the DHE/DPOS regulations or failure to obtain or retain DHE/DPOS approval may result in the de-certification of the course by the Air Pollution Control Division ([APCD](#)).

II.E.6. Applicants who wish to offer courses already approved by the Environmental Protection Agency or by a state whose training requirements are at least as stringent as the [Commission](#)'s and whose asbestos certification program has been approved by [EPA](#) shall be granted reciprocity to teach classes in Colorado. The approval granted to such course provider shall be at the same level as that already approved by EPA or another state. The applicant shall be subject to all requirements outlined in this regulation.

II.E.7. In the curriculum and course agenda, the applicant must show what portions of the course will be taught by each instructor.

## II.F. INSTRUCTOR QUALIFICATIONS

All courses must be taught by qualified instructors. The minimum qualifications for instructors shall be:

II.F.1. A high school diploma or GED;

II.F.2. Current [AHERA](#) training credentials and current Colorado certification for the discipline being taught by the instructor (variances for out-of-state instructors will be considered on a case-by-case basis);

II.F.3. Three (3) years of field experience in the discipline being taught. This may be obtained by a combination of any of the following items:

II.F.3.a. Actual field experience in the field being taught, such as; performing abatement activities as a Worker or Supervisor; or performing inspection and/or management planning activities; or performing [project design](#) activities; or performing [Air Monitoring Specialist](#) activities.

II.F.3.b. Teaching in the discipline, under the supervision of a qualified instructor, with one (1) month of teaching equal to one (1) month of experience.

II.F.3.c. Collegiate or seminar-type classes (e.g., [NIOSH](#) 582, 7400 courses, etc.) with one (1) week of training equal to one (1) month of experience.

II.F.4. Documentation of experience claimed or instruction received must be provided by the applicant. This must include submission of a résumé with telephone numbers, and references, that are provided to allow for verification by the [Division](#).

II.F.5. All instructors must meet the above requirements both at the time of course submission for approval and at the time the course is being taught. The [Division](#) may grant assistant instructor status to those individuals who do not currently meet all requirements at the time of the course submittal. The individuals may re-apply for approval as full instructors once they have met the requirements.

## II.G. TRAINING COURSE NOTIFICATIONS

II.G.1. Training course providers must notify the [Division](#) in writing of scheduled courses at least two weeks (10 [working days](#)) prior to the offering of the course. Notification of course cancellations must be provided to the Division by 5:00 p.m. the day prior to the course offering.

II.G.2. For any course in which training or certification is required, the Training Provider must submit a list of students who took the course and a fee of \$10.00 per student to the Division no later than 30 calendar days after the conclusion of the course.

## II.H. TRAINING COURSE AUDITS

The [Division](#) may audit any training course given for the purpose of preparing individuals for State certification. Any significant omissions or deficiencies may result in de-certification of the course. There will be no charge to the Division for auditing a training course.

## II.I. RECIPROcity

II.I.1. An individual who has a valid certificate, license or other registration from another state, District of Columbia or other territory of the United States, or other [Division](#)-approved national entity (specifically, the National Asbestos Examinations and Registration System) which has a certification and testing program that has been approved by the [EPA](#) and which is at least as stringent as the [Commission's](#), may apply for certification by submitting an application on the form specified by the Division, along with the applicable fee.

II.I.2. Those individuals applying under this subsection II.I. (Reciprocity) for Colorado certification as a Supervisor or project designer must also successfully complete a [Division](#)-administered examination on state laws and regulations related to [asbestos abatement](#) before Colorado certification will be issued.

II.I.3. Those individuals applying under this subsection II.I. (Reciprocity) for Colorado certification as an [Air Monitoring Specialist](#) must also:

II.I.3.a. provide documentation to the [Division](#) showing that they have been [certified](#) to conduct [Air Monitoring Specialist](#) activities for at least 1 year.

II.I.3.b. pass the written examination as described in subparagraph II.D.3.a.(iv). Examination.

II.I.4. After receiving Colorado certification, the applicant shall be subject to all requirements outlined in this regulation regarding training and application for renewal of Colorado certification, including testing requirements.

II.I.5. The applicant shall provide documentation to the [Division](#) as may be necessary to allow the Division to determine if a reciprocal certificate should be issued.

## II.J. PROJECT MANAGER QUALIFICATIONS

II.J.1. There is no Project Manager certification requirement. Where a Project Manager is required pursuant to the Regulation No. 8, Part B, the Project Manager shall satisfy the certification, academic training, experience, and educational requirements as set forth below:

II.J.1.a. Certification as a Project Designer in accordance with this Section II. Project Managers must have proof of this certification with them on the project site.

II.J.1.b. Successful completion of a [Division](#)-approved [Air Monitoring Specialist](#) course. A 4-year college degree in industrial hygiene, a degree in environmental health with a major concentration in industrial hygiene, or the possession of a certified industrial hygienist ([CIH](#)) certificate given by the American Board of Industrial Hygiene (ABIH), may be substituted for the above Air Monitoring Specialist course. Project Managers must have proof of the required training with them on the project site.

II.J.1.c. A minimum of one (1) year of experience supervising, overseeing or monitoring [asbestos abatement](#) projects.

II.J.1.d. Possession of a high school diploma or G.E.D.

## II.K. DENIAL, SUSPENSION, REVOCATION, OR REFUSAL TO RENEW CERTIFICATION

The [Division](#) may deny, suspend, revoke, or refuse to renew certifications in accordance with the provisions of § 25-7-508, C.R.S.

II.L. Any person performing asbestos consulting firm activities as defined in this regulation must be registered as an Asbestos Consulting Firm. Applicants seeking to be registered shall submit their request to the Division on a form supplied by the Division along with an annual fee of \$500.00.

II.M. Any person performing asbestos laboratory activities as defined in this regulation must be registered as an Asbestos Laboratory. Applicants seeking to be registered shall submit their request to the Division on a form supplied by the Division along with an annual fee of \$250.00.

## II.N. EXEMPTIONS

The following sections of the regulation contain exemptions from certain requirements. Please refer to the indicated section for the specific details of the exemption.

- Anyone working in a Non-Public Access Areas is exempted from certain requirements. See paragraph II.A.3.

- Certified Industrial Hygienists are exempted from certain training requirements. See subparagraphs II.D.3.a., II.D.3.b., and subsection II.J.

All underlined text in this regulation indicates defined terms.

### III. ABATEMENT, RENOVATION AND DEMOLITION PROJECTS

#### III.A. INSPECTION

- III.A.1. Prior to any renovation or demolition which may disturb greater than the trigger levels of material identified as a suspect asbestos-containing material pursuant to the EPA "Green Book", Managing Asbestos in Place, Appendix G (1990), the facility component(s) to be affected by the renovation or demolition shall be inspected to determine if abatement is required.
- III.A.1.a. Individuals performing these inspections shall be Building Inspectors certified in accordance with this regulation.
- III.A.1.b. The inspection, sampling and assessments of the suspect materials must be performed as required in paragraph IV.C.1. (Inspection), subsections IV.D. (Sampling) and IV.F. (Assessment) of this regulation.
- III.A.1.c. The analysis of samples collected during these inspections must be performed as required in subsection IV.E. (Analysis) of this regulation with one exception: if the asbestos content of a sample of friable asbestos is estimated to be 1% asbestos or less, but greater than 0%, by a method other than point counting (such as visual estimation), the determination shall be repeated using the point counting technique with polarized light microscopy. If a result obtained by point count is different from a result obtained by visual estimation, the point count result must be used. Tar impregnated samples do not have to be point counted.
- III.A.1.d. Buildings, or those portions thereof, that were constructed after October 12, 1988 shall be exempt from this inspection requirement if an architect or project engineer responsible for the construction of the building, or a state certified Inspector, signs a statement that no ACM was specified as a building material in any construction document for the building or no ACM was used as a building material in the building. NOTE: The Division recommends that all buildings be inspected prior to any renovation or demolition activities, regardless of the date of construction.
- III.A.1.e. To prevent any real or potential conflicts of interest, Building Inspectors identifying ACM must be independent of the GAC that will subsequently abate the ACM identified. Inspectors need not be independent of the GAC if both the Inspector and the licensed GAC are employees of the building owner.
- III.A.2. Abatement, in accordance with Regulation No. 8, is required if the amount of ACM that will be disturbed in connection with the renovation exceeds the trigger levels.
- III.A.3. Any asbestos-containing material that is friable or will be made friable during demolition activities in any area of public access or non-public access area must be removed prior to demolition. Removal, in accordance with Regulation No. 8, is

required if the amount of asbestos-containing material that is friable or will become friable during demolition exceeds the [trigger levels](#).

### III.B. USE OF CERTIFIED AND REQUIRED PERSONNEL

III.B.1. Any [person](#) who conducts [asbestos abatement](#) other than abatement performed in a [school building](#) shall obtain a [GAC](#) if the amount of [asbestos](#) to be abated exceeds the [trigger levels](#) on any occasion.

III.B.1.a. A [person](#) required to be [certified](#) in accordance with paragraph III.B.1., above, shall employ at least one state-certified Supervisor who shall be on-site at all times when [asbestos abatement](#) work is proceeding. [Asbestos](#) Workers must have access to a certified Supervisor throughout the duration of the abatement project.

III.B.1.b. For abatement projects where a [GAC](#) is required, all abatement Workers and Supervisors shall be [certified](#) in accordance with the provisions of Section II (Certification Requirements). GACs shall ensure that all [asbestos abatement](#) Workers and Supervisors are properly certified.

III.B.1.c. The requirements of this Paragraph III.B.1. shall not apply to any individual who performs [asbestos abatement](#) on a [single-family residential dwelling](#), that is the individual's primary residence.

III.B.2. With respect to [school buildings](#), [public or commercial buildings](#) and [single-family residential dwellings](#), any individual who inspects any building for the presence of [asbestos](#) shall be [certified](#) as a Building Inspector in accordance with this regulation.

III.B.3. With respect to [school buildings](#), any individual who develops an [asbestos](#) management plan, supervises [asbestos abatement](#) activities, performs asbestos abatement, or designs asbestos abatement projects shall be [certified](#) for the specific activity he is engaged in if the amount of [asbestos-containing material](#) exceeds, on any occasion, 3 linear feet on pipes, or 3 square feet on other surfaces.

III.B.3.a. The [LEA](#) or its contractor shall ensure that at least one state-[certified](#) Supervisor be on-site at all times when [asbestos abatement](#) work is proceeding. [Asbestos](#) Workers must have access to certified Supervisors throughout the duration of the abatement project.

III.B.4. With respect to [public and commercial buildings](#) and [single-family residential dwellings](#), any individual who develops an [asbestos](#) management plan, supervises [asbestos abatement](#) activities, performs asbestos abatement, or designs asbestos abatement projects shall be [certified](#) for the specific activity in which he is engaged if the amount of [asbestos-containing material](#) exceeds, on any occasion, the [trigger levels](#).

III.B.5. Effective March 30, 2004, any individual who performs a final visual inspection or performs any [air monitoring](#) referred to in this regulation must be [certified](#) as an [Air Monitoring Specialist](#).

III.B.6. Project Manager

A project manager shall be used on all [asbestos abatement](#) projects in which the amount of [friable asbestos-containing material](#) to be abated exceeds 1,000 linear feet on pipes, or 3,000 square feet on other surfaces.

III.B.6.a. Waiver of the Project Management Requirements

Building owners who seek to have the project manager requirement waived must submit the request, on a form supplied by the [Division](#) as part of the notification required in III.E.1. (Notices).

III.B.6.a.(i). Waiver requests shall be approved by the Division if the project is performed by a [GAC](#) with a non-compliance history of fewer than two (2) Division-issued compliance determinations with a finding of guilty during the past two (2) years prior to the start of the project.

III.B.6.a.(ii). If the project is conducted by a GAC with a non-compliance history of two (2) or more Division-issued compliance determinations with a finding of guilty during the past two (2) years, the building owner must, on a form supplied by the Division, demonstrate to the satisfaction of the Division that compliance with the project manager requirements is overly burdensome or not feasible.

III.B.6.b. The GAC shall notify the building owner during bid proposals as to whether or not a project manager would be required.

III.C. PROJECT DESIGN

III.C.1. Prior to the start of any [asbestos abatement](#) in an [area of public access](#) of a non-school building, in which the amount of [asbestos-containing material](#) to be abated exceeds 1,000 linear feet on pipes, or 3,000 square feet on other surfaces, a written [project design](#) shall be developed by a Project Designer [certified](#) under these regulations.

III.C.2. Prior to the start of any [asbestos abatement](#) in a [school building](#) in which the amount of [friable asbestos-containing material](#) to be abated exceeds 3 linear feet on pipes, or 3 square feet on other surfaces, a written [project design](#) shall be developed by a Project Designer [certified](#) under these regulations, in accordance with paragraph IV.G.7 of this regulation.

III.C.3. A [project design](#) shall include:

- an accurate and detailed scope of work
- quantities of material to be removed
- a discussion of the removal methods
- air exchange calculations
- signature of the project designer
- [project design](#) completion date and dates of any amendments
- drawings that include:
  - locations of [ACM](#) to be abated
  - the [decontamination unit](#)
  - the waste load-out
  - negative air machines
  - air intake and exhaust
  - emergency exits, when applicable

III.C.4. A signed copy of the [project design](#) shall be available on-site at all times during the abatement activities for review by Inspectors, the Project Manager and the [certified Air Monitoring Specialist](#).

### III.D. PROJECT MANAGEMENT

III.D.1. The project manager shall be responsible for:

- assessing that the project is conducted in accordance with this regulation.
- assessing that the [project design](#) is followed.
- assessing that the abatement project is cleared in accordance with this regulation.
- assessing that the asbestos waste generated by the project is properly manifested and disposed of in accordance with this regulation.
- communicating these [assessments](#) to the building owner or [GAC](#).

III.D.2. Project managers shall be [independent](#) of the [asbestos abatement contractor](#) and work strictly on behalf of the building owner to the extent feasible, unless the abatement is being performed in-house.

III.D.3. Project managers must sign the original copy of the permit for the permit to be valid.

### III.E. NOTIFICATIONS

III.E.1. Notices

Any [person](#) intending to either abate [asbestos-containing materials](#) in any amount greater than the [trigger levels](#), or demolish a [facility](#) shall, on a form supplied by the [Division](#), provide a written notice of the intent to conduct [asbestos abatement](#) or [demolition](#). When a permit is required under paragraph III.G.1 (Permits), this notice shall serve as the permit application referred to in paragraph III.G.1. False, inaccurate or misleading information contained in the notice is cause for the Division

to revoke a permit issued pursuant to paragraph III.G.1. (Permits) and/or to initiate an enforcement action pursuant to §25-7-508, [C.R.S.](#) Any modification of information contained in the notification must be made in writing to the Division on the first regular business day preceding the change. Notices required under this paragraph are subject to the following conditions:

- III.E.1.a. The notice shall be postmarked or delivered to the [Division](#) at least 10 [working days](#) before commencing an abatement project or [demolition](#) project, except as provided in subparagraphs b., c., and d. of this section. Any fees required under this paragraph III.E.1. (Notices) or III.G.1. (Permits) must accompany the notice for the notice to be accepted by the Division.
- III.E.1.b. If the project is not one for which permit is required pursuant to paragraph III.G.1. (Permits), a processing fee of \$80.00 shall be submitted to the [Division](#) for each notice. For abatement projects that occur in non-public access areas, the Division may charge the [person](#) submitting this notice a fee for site inspections and any necessary monitoring for compliance with applicable sections of this regulation. The fee shall be assessed at a rate of \$80.00 per hour.
- III.E.1.c. For [large contiguous facility complexes](#), if the project is not one for which permit is required pursuant to III.G.1. (Permits), an annual fee in the amount of \$80.00 per abatement project that will be undertaken that year shall be submitted to the [Division](#). If over the course of the year should more than the anticipated number of projects occur, an additional \$80.00 per notice shall be submitted to the Division. At the end of one year the Division will refund fees for projects that have not been performed, less a \$80.00 processing fee.
- III.E.1.d. For demolition projects, a base fee of \$50.00 is required plus an additional \$5.00 per one thousand square feet, or any portion thereof, of structure footprint.
- III.E.1.e. Waiver of the 10-Working Day Notification Period

There are two situations where the [Division](#) will consider a waiver of the 10-[working day](#) notifications. They are:

III.E.1.e.(i). Emergencies

In the event of an [emergency](#) in which [asbestos abatement](#) work must commence at once, the [Division](#) and the appropriate county health department shall be notified immediately by fax or telephone. The [GAC](#) or building owner must submit a written notification on a form supplied by the Division at the start of the next regular State business day after commencing the emergency abatement. The application shall be accompanied by a written explanation of the events surrounding the emergency and signed by both the building owner and the GAC. If the

emergency occurs during non-business hours, the Division and the appropriate county health department shall be notified by telephone on the morning of the next regular State business day

III.E.1.e.(ii). Unexpected Discovery

In the event of an unexpected discovery of [asbestos-containing materials](#) behind a wall, above a ceiling, beneath a floor or otherwise hidden in such a way as to preclude access to it without damaging part of the structure, should the building owner wish to seek a waiver of the normal 10-[working day](#) notification, the [GAC](#) or building owner shall notify the [Division](#) by the end of the next regular State business day following the unexpected discovery.

III.E.1.f. For structures that are declared structurally unsound and in danger of imminent collapse by an authorized State or local governmental representative, as described in paragraph III.W. (Structurally Unsound Buildings), the GAC, [demolition](#) contractor, or building owner shall notify the [Division](#) as early as possible before demolition begins if the operation is as described in subsection III.W. (Structurally Unsound Buildings). The notification shall contain the name, title, and authority of the State or local governmental representative who has ordered the demolition.

III.E.2. Single-Family Residential Dwelling Opt-Out Notice

An owner of a [single-family residential dwelling](#) may opt-out of the [area of public access](#) requirements of this regulation for the abatement of [asbestos-containing material](#) in excess of the [trigger levels](#) in that owner's primary residence by completing the opt-out form. If the homeowner chooses to opt-out, the [GAC](#) contracting with the homeowner shall provide the completed, signed "Single-Family Residential Dwelling Area of Public Access Opt-Out Form" to the Division. For a project in which the homeowner has chosen to opt-out, then the single-family residential dwelling will revert to being subject to the area of public access requirements: 1) at the time of the homeowner's choosing; 2) when the homeowner no longer owns the single-family residential dwelling; or, 3) if the dwelling ceases being the homeowner's primary residence, whichever is first.

III.F. ALTERNATIVE PROCEDURES AND VARIANCES

The [Division](#) may, at its discretion, grant a variance from this Regulation allowing use of an alternative procedure for the clearance of abatement projects or the control of emissions from an [asbestos abatement](#) project provided that the [person](#) conducting the asbestos abatement submits the alternative procedure in writing to the Division along with a \$50.00 review fee, and demonstrates to the satisfaction of the Division that compliance with the regulation is neither practical nor feasible, or that the proposed alternative procedures provide equivalent control of [asbestos](#).

Within sixty (60) days of the receipt of the request the [Division](#) shall notify the applicant in writing of its decision to either grant or deny the variance, except that if the request is to utilize an alternative procedure previously evaluated by the Division the variance shall be granted or denied within (10) ten days. No [person](#) shall begin abatement using such a procedure until a variance has been requested, and approved in writing. Any violation of the conditions of the variance will be considered a violation of this Regulation.

III.G. PERMITS

III.G.1. Permit Applications

III.G.1.a. No [person](#) shall commence an abatement project in which the amount of [friable asbestos-containing material](#) exceeds the [trigger levels](#) in an [area of public access](#) without first obtaining a permit from the [Division](#). Only the [GAC](#) in whose name the permit is issued may conduct the abatement project.

III.G.1.b. Permit fees for [large contiguous facility complexes](#) shall be paid annually to the [Division](#) in the amount of \$1,200.00 plus \$80.00 for each anticipated project. This fee must accompany the permit application for the application to be accepted. At the end of the permit year, the Division will refund fees for projects that have not been conducted, less a \$80.00 processing fee.

III.G.1.c. For any project other than those on [large contiguous facility complexes](#), the permittee shall be assessed a fee for the permit. The fee must accompany each permit application. The fee schedule is as follows:

Project Length	Permit Fee for Projects	
	Applies to ALL facilities including single-family residential dwellings	Applies ONLY to single-family residential dwellings
	Greater than 260 liner feet/ 160 square feet/ 55 gallon drum	Greater than 50 liner feet/ 32 square feet/ 55 gallon drum. but less than or equal to 260 linear feet/ 160 square feet/ 55 gallon drum
1 – 30 days	\$400.00	\$180.00
31 – 90 days	\$800.00	\$300.00
91 - 365 days	\$1,200.00	\$420.00

Any inspections in excess of one for a 30-day permit, two for a 90-day permit, or three for an one-year permit will be assessed at a rate of \$80.00 per hour.

Permits are valid for a maximum of one year. A new permit must be obtained for projects lasting longer than one year.

### III.G.2. Permit/Project Modification

Whenever there is a modification in the project, the permittee must notify the [Division](#) and the local county health department (as designated by the Division) in writing. A project modification occurs when there is a change in the scope of work, the scheduled work dates or times, or the project manager. The permittee shall notify the Division by the end of the next regular State business day following the modification.

### III.G.3. Multiple-Phase Projects

Buildings owned by the same [person](#), which are at different locations, must be permitted separately. Buildings owned by the same person, which are at the same location, can be covered by one multiple-phase permit. When applying for a permit for abatement to be performed in more than one building or in more than one area within a single building, the applicant shall provide, on a form supplied by the [Division](#), additional information regarding the multiple-phase project. Whenever there is a change in any of the information provided on the form, a new form shall be submitted to the Division that:

III.G.3.a. Indicates clearly which phases of the project have changed,

III.G.3.b. Is postmarked or delivered to the [Division](#) at least 10 [working days](#) before the start of any phase having a change in its starting date

III.G.3.c. Indicates additional phases that are to be added after the start of a multi-phase project by the submission of a new application covering the additional phase or phases 10 [working days](#) prior to the start of the first additional phase. There is a \$80.00 fee for each additional phase after the initial permit approval.

III.G.4. The original of the [Division](#)-issued permit shall be posted in a visible location at the work site at all times.

III.G.5. [Asbestos abatement](#) permits are required for asbestos abatement projects in [single-family residential dwellings](#) for which the amount of [asbestos-containing materials](#) to be abated exceeds the [trigger levels](#), unless either of the following conditions apply:

III.G.5.a. The homeowner has requested that the single-family residential dwelling not be considered an [area of public access](#) pursuant to section III.E.2.; or

III.G.5.b. The individual is performing the abatement project himself/herself in a single-family residential dwelling that is the individual's primary residence.

### III.G.6. Transferring a Permit

Should a GAC wish to transfer a permit to another GAC, the GAC who will perform the abatement project must submit a new permit application and pay the [Division](#) a \$55.00 processing fee.

III.G.7. No permit to conduct [asbestos abatement](#) shall be issued to a [person](#) who has failed to pay a [Division](#)-assessed penalty for violating any provision of this Regulation No. 8 or to any person who has otherwise failed to comply with any order of the Division, unless the penalty or order is under appeal before the Air Quality Control [Commission](#).

III.G.8. Permits issued on projects requiring project managers shall not be valid until the original copy of the permit is signed by the project manager.

### III.H. ABATEMENT SEQUENCE

This subsection III.H. applies to [asbestos abatement](#) projects in [areas of public access](#) where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#).

#### III.H.1. Pre-Abatement

Pre-abatement is the time period covering the commencement of construction of the containment and all other preparations (including any necessary [pre-cleaning](#)) taking place prior to the actual abatement of [ACM](#). This abatement phase does not include the transport of materials and equipment to the job site. The transport of materials and equipment to the job site is the only activity that is allowed prior to the permit start date.

Below are the steps for the pre-abatement phase of the project. Please note that steps 1 through 6, where applicable, are mandatory, and the exact sequence shown below is mandatory.

- 1) Install [critical barriers](#)  
(pursuant to subsection III.I, Critical Barrier Installation)
- 2) Establish negative pressure  
(pursuant to subsection III.J, Air Cleaning and Negative Pressure Requirements)
- 3) Construct the [decontamination area](#)  
(pursuant to subsection III.K, Decontamination Area)
- 4) Pre-clean surfaces  
(pursuant to subsection III.L, Pre-cleaning of Surfaces)
- 5) Cover [fixed objects](#)  
(pursuant to subsection III.M, Covering Fixed Objects)
- 6) Construct the containment  
(pursuant to subsection III.N, Containment Components)

#### III.H.2. Active Abatement

Active abatement means the time period beginning with the completion of the pre-abatement phase and ending when the area has passed final clearance air monitoring and the [critical barriers](#) have been completely removed.

The active abatement phase includes the actual "gross" [removal](#) of [ACM](#) and all aspects of "[final cleaning](#)" that are conducted prior to the areas being pronounced ready for a final visual inspection. The final visual inspection, final clearance [air monitoring](#) , and the removal of [critical barriers](#) are the last activities included in the active abatement phase.

Below are the steps for the active abatement phase of the project. Please note that steps 7, 8, 9, and 10, are mandatory, and the exact sequence shown below is mandatory.

- 7) Conduct abatement  
(pursuant to subsection III.O, Abatement Methods)
- 8) Conduct final visual inspection  
(pursuant to paragraph III.P.1., Final Visual Inspection)
- 9) Conduct final clearance [air monitoring](#)  
(pursuant to paragraph III.P.3., Final Clearance Air Monitoring)
- 10) Conduct the tear-down  
(pursuant to subsection III.Q., Tear-down)

### III.H.3. Post-Abatement

Post abatement means any point in time following the termination of the active abatement phase. Below is the step for the post-abatement phase of the project. Please note that step 11 is mandatory.

- 11) Handle waste. Handling of waste is permissible during the active abatement phase.  
(pursuant to subsection III.R., Waste Handling).

### III.I. CRITICAL BARRIER INSTALLATION

This subsection III.I. applies to [asbestos abatement](#) projects in [areas of public access](#) where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#).

All openings between the [work area](#) and clean areas including, but not limited to, windows, doorways, elevator openings, corridor entrances, drains, ducts, grills, grates, diffusers and skylights shall be sealed with a minimum of one layer of 6-mil polyethylene sheeting.

### III.J. AIR CLEANING AND NEGATIVE PRESSURE REQUIREMENTS

This subsection III.J. applies to [asbestos abatement](#) projects in [areas of public access](#) where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#).

#### III.J.1. Negative Air Machines and HEPA Filters

- III.J.1.a. [Negative pressure air filtration units](#) shall be operated continuously from the time of barrier construction through the time that acceptable Final Clearance Air Monitoring results are obtained in accordance with subsection III.P. (Clearing Abatement Projects).
- III.J.1.b. The [GAC](#) who is required to use air cleaning shall properly install, use, operate, and maintain all air-cleaning equipment authorized by this subparagraph III.J. (Air Cleaning and Negative Pressure Requirements).
- III.J.1.c. The [GAC](#) who is required to use air cleaning shall use a [HEPA filter](#) to clean the air, except as noted below:
  - III.J.1.c.(i). Bypass devices may be used only during upset or [emergency](#) conditions and then only for so long as it takes to shut down the operation generating the [particulate asbestos material](#).
  - III.J.1.c.(ii). If the use of a filter creates a fire or explosion hazard, the [Division](#) may authorize as a substitute the use of wet collectors designed to operate with a unit contacting energy of at least 9.95 kilopascals (40 inches of water gauge pressure).
  - III.J.1.c.(iii). The [Division](#) may authorize the use of filtering equipment other than [HEPA filters](#) if it has been previously approved by [EPA](#) and if it can be demonstrated to the Division's satisfaction that it is equivalent to the described equipment in filtering [particulate asbestos material](#).
- III.J.1.d. These units shall exhaust filtered air to the outside of the building when the length of exhaust duct required to do so does not overburden the negative air units. If air must be exhausted to the interior of the building, it must be done in accordance with subparagraph III.U.1.b. (During Abatement).

#### III.J.2. Air Exchange Rates

The [GAC](#) who is required to use air cleaning shall maintain sufficient air cleaning equipment in operation at all times to ensure that the air within the [work area](#) is exchanged a minimum of four (4) times per hour.

### III.J.3. Pressure Differential

At all times the differential of the [work area](#) to the clean area shall be, at a minimum, -0.02 inches of water. A manometer or pressure gauge shall be set up on the outside of the containment area so that the pressure differential between the work area and the clean area may be determined. At all times the differential of the work area to the clean area shall be recorded using a strip chart recorder or its equivalent.

### III.J.4. Air Flow Direction

At all times air flow direction shall be from the exterior of the containment barriers into the interior of the containment barriers. In addition, smoke tubes shall be readily available on the outside of the containment barriers at all times so that air flow direction may be determined.

### III.K. DECONTAMINATION UNIT

This subsection III.K. applies to [asbestos abatement](#) projects in [areas of public access](#) where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#).

#### III.K.1. Construction

A [decontamination unit](#) shall be constructed to provide employees with a facility to be used to decontaminate [asbestos](#)-exposed Workers and equipment before such Workers and equipment leave the [work area](#). The decontamination unit shall consist of the following three stages, which shall be separated by staggered flaps or an equivalent system of barriers that will self-close should negative air pressure fail:

##### III.K.1.a. Clean Room

The [clean room](#) shall be sized to accommodate the clothes and equipment of the work crew. Clean work clothes, clean disposable clothing, replacement filters for respirators, towels and other necessary items shall be provided in the clean room. No asbestos-contaminated items may enter this room. Workers shall use this area to suit up, store street clothes, and don respiratory protection on their way to the [work area](#), and to dress in clean clothes after showering.

##### III.K.1.b. Shower

Except for small-scale abatement projects where [glovebag](#) methods or [mini-enclosure](#) methods are used, a portable shower shall be used to permit the employees to clean themselves after exposure to [asbestos](#). Each showerhead shall be supplied with hot and cold water adjustable at the tap, and a drain equipped with a filtration system to filter asbestos from the shower wastewater to a fiber size of five (5) microns prior to discharging the wastewater into a sanitary sewer. The [shower room](#) shall contain one or more

showers to accommodate Workers. The shower enclosure shall be constructed to ensure against leakage of any kind and shall be kept clean of all debris and [ACWM](#) at all times.

#### III.K.1.c. Equipment (Dirty) Room

The [equipment room](#) shall be used for storage of equipment and tools at the end of a shift after decontamination using a [HEPA filtered](#) vacuum or [wet cleaning](#) techniques. A labeled six (6) mil polyethylene bag for collection of disposable clothing shall be located in this room. Contaminated footwear shall be stored in this area for reuse.

#### III.K.2. Entry and Exit

The following procedures shall be used for [work area](#) entry and exit unless there is an [emergency](#) situation immediately dangerous to life or health:

III.K.2.a. All personnel and authorized visitors shall enter and exit the [work area](#) through the Worker [decontamination unit](#) and not the waste load-out.

III.K.2.b. All personnel shall don disposable coveralls, head covering and foot covering prior to entering the [work area](#). To prevent contamination from leaving the work area, disposable coveralls in sizes adequate to accommodate movement without tearing shall be worn by all personnel entering the work area. The coveralls (Tyvek® or other material equally effective in preventing gross [ACM](#) from contacting the individual's body) shall include head and foot covers (unless head and foot covers are provided separately).

III.K.2.c. Before leaving the [work area](#), all personnel shall remove gross contamination from the outside of respirators and dispose of protective clothing in containers labeled for disposal in accordance with subparagraph III.R.2.b. (Labeling). Personnel shall proceed to the shower area and then shower and shampoo to remove residual [asbestos](#) contamination. After showering, personnel shall proceed to the [clean room](#).

#### III.L. PRE-CLEANING OF SURFACES

This subsection III.L. applies to [asbestos abatement](#) projects in [areas of public access](#) where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#).

[Pre-cleaning](#) of surfaces contaminated with visible dust or debris shall be conducted prior to the commencement of any abatement project. The following procedures shall be conducted in the order in which they appear:

III.L.1. [HEPA vacuum](#) or wet wipe all surfaces contaminated with visible dust or debris. All [movable objects](#) shall be cleaned of dust and debris by HEPA vacuum or wet wiped before removal from the [work area](#);

III.L.2. Dispose of all dust and debris, filters, mop heads and other contaminated waste as [ACWM](#) pursuant to subsection III.R. (Waste Handling).

III.L.3. [Pre-cleaning](#) of dirt floors shall be conducted in accordance with paragraph III.S.5. (Asbestos-Contaminated Soil).

### III.M. COVERING FIXED OBJECTS

This subsection III.M. applies to [asbestos abatement](#) projects in [areas of public access](#) where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#).

At a minimum, all [fixed objects](#) in the [work area](#) shall be covered with one (1) layer of six (6) mil polyethylene sheeting, secured in place.

### III.N. CONTAINMENT COMPONENTS

This subsection III.N. applies to [asbestos abatement](#) projects in [areas of public access](#) where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#).

Construction of the containment components may commence only after adequate negative pressure is established.

Polyethylene sheeting shall be used in the construction of containment barriers in order to isolate the [work area](#) during abatement projects. Spray poly may be substituted for polyethylene sheeting.

#### III.N.1. Wall, Floor and Ceiling Polyethylene

Polyethylene sheeting shall be used in thicknesses and number of layers as specified in subparagraphs III.N.1.a., b., and c., below, and shall be used to seal all windows, doors, ventilation systems, and wall penetrations, and to cover ceilings, walls, and floors in the [work area](#). Duct tape or spray adhesive shall be used to seal the edges of the plastic and to seal any holes in the containment. Polyethylene sheeting shall be attached using any combination of duct tape or other waterproof tape, furring strips, spray glue, staples, nails, screws or other effective materials capable of sealing adjacent sheets of polyethylene and capable of sealing polyethylene to dissimilar finished or unfinished surfaces under both wet and dry conditions.

##### III.N.1.a. Laying Polyethylene on Floors

At a minimum, floors shall be covered with sheeting consisting of two (2) layers of six (6) mil polyethylene sheeting, unless spray poly is used. Floor sheeting shall extend up sidewalls at least twelve (12) inches and be sized to minimize seams. No seams shall be located along wall/floor joints.

III.N.1.b. Hanging Polyethylene on Walls

At a minimum, walls shall be covered with sheeting that shall consist of two (2) layers of four (4) mil or thicker polyethylene, unless spray poly is used. It shall be installed to minimize seams and shall extend beyond wall/floor joints at least twelve (12) inches. No seams shall be located along wall/wall joints.

III.N.1.c. Hanging Polyethylene Sheeting on Ceilings

If a [work area](#) has a ceiling that will not be abated as part of the abatement work, at a minimum, the ceiling shall be covered with sheeting that shall consist of one (1) layer of four (4) mil or thicker polyethylene, unless spray poly is used. It shall be installed to minimize seams and shall extend beyond wall/ceiling joints at least twelve (12) inches. No seams shall be located along wall/ceiling joints.

III.N.2. View Port

A clear view port with a minimum size of 12" x 12" shall be installed to allow a view of the interior of the [work area](#). If a view port cannot be installed, an explanation shall be made on the notification form stating that it will not be installed and the reason why.

III.N.3. Waste Load-out Area

All containments shall be constructed to include a [waste load-out area](#). This area shall be separate from the [decontamination unit](#) and shall be used as a temporary storage area for bagged waste and as a port for transferring waste to the transport vehicle. All waste load-out areas must have a minimum of two separate chambers separated by air locks.

III.N.4. Secondary Containment

III.N.4.a. For [glovebag removals](#) (see III.V.1) the [GAC](#) in lieu of full containment shall erect [secondary containment](#) barriers where the amount of [ACM](#) to be removed in a [functional space](#) exceeds three (3) linear or three (3) square feet.

III.N.4.b. For facility component removals (see III.V.2) in lieu of full containment the use of a secondary containment to facilitate the required air clearance monitoring is recommended, but not required.

### III.O. ABATEMENT METHODS

This subsection III.O. applies to [asbestos abatement](#) projects in [areas of public access](#) where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#).

The three methods of [asbestos abatement](#) are listed below. Any additional requirements using these methods, other than those already specified in this regulation, are detailed in paragraphs II.O.1., 2., and 3., below.

#### III.O.1. Removal

##### III.O.1.a. Controlling Airborne Fiber Release/Emissions

###### III.O.1.a.(i). Wetting

###### III.O.1.a.(i).(A). Amended Water

[Amended water](#) shall be used to adequately wet [asbestos-containing materials](#) before [removal](#) is attempted. All waste shall be kept adequately wet with amended water until bagged for disposal. [Surfactants](#) must be a commercially available product specifically designed to be mixed with water for use in wetting of asbestos-containing materials.

###### III.O.1.a.(i).(B). Airless Sprayers

Airless sprayers shall be used when applying [amended water](#) or encapsulant to [asbestos-containing materials](#).

###### III.O.1.a.(i).(C). Cold Temperature Wetting

When the temperature at the point of wetting is below freezing (0°C / 32°F):

III.O.1.a.i(C)(1) The [GAC](#) shall apply for a variance from the [Division](#) in accordance with the requirements of subsection III.F. (Alternative Procedures and Variances); or

III.O.1.a.i(C)(2) Remove [facility components](#) coated or covered with [friable asbestos-containing materials](#) as units or in sections in accordance with subparagraph III.V.2. (Removing of Facility Components).

III.O.1.a.i(C)(3) Comply with the requirements of section III. (Abatement, Renovation and Demolition Projects).

III.O.1.a.(ii). HEPA Vacuuming

All vacuuming of contaminated surfaces shall be done with a [HEPA filter](#)-equipped vacuum.

III.O.1.a.(iii). Wet Wiping

Wet wiping of contaminated surfaces prior to disassembly of containment barriers shall be done using rags and a bucket of clean or [amended water](#).

III.O.1.b. Removal of Asbestos from Elevated Heights

For [friable asbestos-containing materials](#) that will be [removed](#) or [stripped](#):

III.O.1.b.(i). [Adequately wet](#) the materials to ensure that they remain wet until they are collected for disposal in accordance with subsection III.R. (Waste Handling),

III.O.1.b.(ii). Carefully lower the packaged [ACM](#) to the ground or a lower floor, not dropping, throwing, sliding, or otherwise damaging or disturbing the ACM;

III.O.1.b.(iii). Transport the materials to the ground via dust-tight chutes or containers if they have been [removed](#) or [stripped](#) more than 50 feet above ground level and were not removed as units or in sections; and

III.O.1.b.(iv). Comply with the requirements of section III. (Abatement, Renovation and Demolition Projects).

III.O.2. Encapsulation

III.O.2.a. When spray-applying encapsulants they shall be applied using only airless spray equipment with nozzle pressure adjustable between four hundred (400) and fifteen hundred (1500) [PSI](#) and in accordance with the manufacturer's recommendations for the particular encapsulant.

III.O.3. Enclosure

III.O.3.a. If [enclosure](#) is chosen as the abatement technique, a solid structure (airtight walls and ceilings) shall be built around the [facility component](#) to prevent the release of [ACM](#) into the area beyond the enclosure and to prevent disturbance of ACM by casual contact during future maintenance operations. A containment barrier need not be erected when constructing an enclosure provided that the ACM will not be disturbed during the building of the enclosure. Such a permanent (i.e., for the life of the building) enclosure shall be built of new construction materials and shall be impact resistant and airtight. Before constructing the enclosure, the [person](#) conducting the [asbestos abatement](#) shall move all active electrical conduits, telephone lines, recessed

lights, and pipes out of the area to be enclosed in order to ensure that the enclosure will not have to be reopened later for routine or [emergency](#) maintenance.

- III.O.3.b. The master floor plans shall indicate the exact location and condition of the enclosed [asbestos](#) and this plan shall be kept in a separate asbestos file with the building superintendent or engineer.

### III.P. CLEARING ABATEMENT PROJECTS

This subsection III.P. applies to [asbestos abatement](#) projects in [areas of public access](#), other than [school buildings](#), where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#). For clearance requirements in school buildings, see paragraph IV.G.9. (Completion of Response Actions).

The [GAC](#), [certified Air Monitoring Specialist](#), and the building owner shall ensure that all abatement projects are completed as described below.

All [air monitoring](#) and final visual inspections required under this regulation shall be performed by certified Air Monitoring Specialists [independent](#) of the GAC to avoid possible conflict of interest.

#### III.P.1. Final Visual Inspection

At the conclusion of any abatement action and with only [critical barriers](#) still in place, a [certified Air Monitoring Specialist](#), who is [independent](#) of the [GAC](#), shall visually inspect each [work area](#) where such action was conducted, and behind the critical barriers, to determine whether all dust and debris has been removed. If any such dust or debris is found, the area shall be re-cleaned until no dust or debris is found. If a critical barrier is removed for cleaning purposes, the area behind the critical barrier shall be cleaned and the critical barrier immediately replaced.

#### III.P.2. [Reserved]

#### III.P.3. Final Clearance Air Monitoring and Sample Analyses

##### III.P.3.a. Sample Collection

- III.P.3.a.(i). Once the area has passed a final visual inspection and no dust or debris has been found, the [certified Air Monitoring Specialist](#) shall collect air samples using aggressive sampling as described in 40 C.F.R. Part 763, Appendix A to Subpart E ([EPA](#) 1995), to monitor air for clearance after each abatement project; except that fans and leaf blowers shall not be directed toward any known [friable ACM](#) remaining in the [work area](#).

III.P.3.a.(ii). The total number of clearance air samples required to determine compliance with subsection III.P. (Clearing Abatement Projects) for a state-permitted abatement project involving greater than the [trigger levels](#) of [ACM](#) is indicated in the following table:

For each work area within the project where the amount of ACM is:	State-Permitted Project in Non-School Building		Response Action in School Building	
	Minimum # of samples to clear each of the following:		Minimum # of samples to clear each of the following:	
	Work area	Project	Work Area	Project
Less than 3 square feet/3 linear feet	1	5	5	5
From 3 square feet/3 linear feet up to 32 square feet/50 linear feet/volume equivalent of a 55-gallon drum	2	5	5 PCM or 13 TEM	5 PCM or 13 TEM
Greater than 32 square feet/50 linear feet/volume equivalent of a 55-gallon drum up to 160 square feet/260 linear feet/volume equivalent of a 55-gallon drum	5	5	5 PCM or 13 TEM	5 PCM or 13 TEM
Greater than 160 square feet/260 linear feet/volume equivalent of a 55-gallon drum	5	5	13 TEM	13 TEM

III.P.3.b. Clearance Criteria

III.P.3.b.(i). Except as provided in paragraph III.P.3.b.iii., an abatement action shall be considered complete when the average concentration of [asbestos](#) of five air samples collected within the abatement [work area](#) and analyzed by the [TEM](#) method in 40 C.F.R. Part 763, Appendix A to Subpart E ([EPA](#) 1995), is not statistically significantly different, as determined by the Z-test calculation as found in that Appendix A, from the average asbestos concentration of five air samples collected at the same time outside the abatement work area and analyzed in the same manner, and the average asbestos concentration of the three field blanks described in that Appendix A, is below the filter background level of 70 structures per square millimeter (70 s/mm<sup>2</sup>).

III.P.3.b.(ii). An action shall also be considered complete if the volume of air drawn for each of the five samples collected within the abatement [work area](#) 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 40 C.F.R. Part 763 Appendix A to Subpart E ([EPA](#) 1995), for the five air samples does not exceed the

filter background level of 70 s/mm<sup>2</sup>, as defined in that Appendix A. If the average concentration of asbestos of the five air samples within the abatement work area exceeds 70 s/mm<sup>2</sup>, or if the volume of air in each of the samples is less than 1,199 liters 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 subparagraph III.P.3.b.i. or III.P.3.b.iii. of this subsection III.P (Clearing Abatement Projects) are met.

III.P.3.b.(iii). The laboratory may analyze [air monitoring](#) samples collected for clearance purposes by [PCM](#) to confirm completion of [removal](#), [encapsulation](#), or [enclosure](#) of [ACM](#). The action shall be considered complete when the results of samples collected in the abatement [work area](#) and analyzed by PCM using the [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 quantification for PCM (0.01 fibers per cubic centimeter, 0.01 [f/cm<sup>3</sup>](#), 10,000 [f/m<sup>3</sup>](#)). The analyst doing said analysis shall be NIOSH 582 or 582E trained.

#### III.P.3.c. Laboratory Accreditation

III.P.3.c.(i). The air samples collected under this subsection III.P. shall be analyzed for [asbestos](#) using laboratories accredited by the National Institute of Standards and Technology to conduct such analysis using [transmission electron microscopy](#) or, under circumstances permitted in this subsection III.P. (Clearing Abatement Projects), laboratories showing successful participation in the American Industrial Hygiene Association Proficiency Analytical Testing (PAT) Program for [phase contrast microscopy](#).

III.P.3.c.(ii). Whenever on-site satellite labs are used for [PCM](#) analysis for final clearance purposes, all [persons](#) conducting said analysis shall be properly trained as an analyst pursuant to the [AIHA](#) Laboratory Quality Assurance Program and shall follow all quality control and quality assurance guidelines as set forth in the [NIOSH](#) Method 7400 entitled "Fibers" published in the NIOSH Manual of Analytical Methods, 3rd Edition, second supplement, August 1987. Satellite labs must be directly under the control of properly accredited laboratories pursuant to the requirements set forth in subparagraph III.P.3.b. (Clearance Criteria) above.

### III.Q. TEAR-DOWN

This subsection III.Q. applies to [asbestos abatement](#) projects in [areas of public access](#) where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#).

The following tasks shall be performed during the tear-down portion of the abatement project:

- Removal of the [critical barriers](#)
- Removal of [negative air machines](#) (NAMs)
- Disassembly of the [decontamination unit](#)
- Disassembly of the [waste load-out area](#)

### III.R. WASTE HANDLING

This subsection III.R. applies to [asbestos abatement](#) projects in [areas of public access](#) and non-public access areas where any amount of [asbestos-containing material](#) has been removed.

#### III.R.1. Disposal Containers

Disposal containers shall be leak-tight and waterproof when sealed. Disposable bags shall be at least six (6) mils polyethylene.

#### III.R.2. Handling Waste Material

Each [person](#) handling [asbestos-containing waste material](#) (ACWM) shall:

- III.R.2.a. Seal all [asbestos-containing waste material](#) in leak-tight containers while wet and label the containers in accordance with subsection III.R.2.b. (Labeling), below.

Appropriate containers and procedures shall be used to prevent all breakage, rupture or leakage during loading, shipping, transportation and storage of [asbestos-containing waste material](#).

III.R.2.b. Affix warning labels to all [ACWM](#) or to their containers, with either of the following warnings:

Danger  
Contains Asbestos Fibers  
Avoid Creating Dust  
Cancer and Lung Disease Hazard

Or

Caution  
Contains Asbestos  
Avoid Opening or Breaking Container  
Breathing Asbestos is Hazardous  
To Your Health

III.R.2.c. Following an abatement project, temporary storage of [ACWM](#) shall be limited to 500 (five hundred), 55-gallon barrels, or the volumetric equivalent thereof, prior to disposal. Storage is permitted only on property owned or operated by the GAC or building owner. Temporary storage shall not exceed a time period of more than 6 months following the completion of the abatement action.

III.R.2.d. Discharge no [visible emissions](#) during the collection, processing (including incineration), packaging, transportation, or deposition of any [ACWM](#) generated by the source.

III.R.2.e. Dispose of [ACWM](#) in accordance with Colorado Department of Health, Hazardous Materials and Waste Management Division regulations.

III.r.2.f. All [asbestos-containing](#) wastewater shall be filtered to five (5) micrometers prior to discharge and shall be discharged to a sanitary sewer.

III.R.3. Follow the waste shipment procedures in accordance with the provisions of 40 C.F.R. part 61 section 150 ([EPA](#) 1995).

### III.S. ABATEMENT OF SPECIAL MATERIALS

This subsection III.S. applies to [asbestos abatement](#) projects in [areas of public access](#) where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#).

### III.S.1. Resilient Floor Tile and Sheet Vinyl Flooring

III.S.1.a. Pursuant to paragraph III.E. (Notification), the [person](#) conducting the project must notify the [Division](#) of the intent to demolish, renovate, or perform [asbestos abatement](#) in any building, structure, [facility](#) or installation, or any portion thereof, which contains [asbestos](#) in any amount that exceeds the [trigger levels](#) whether [friable](#) or not.

III.S.1.b. [Resilient floor tile](#), [sheet vinyl flooring](#), and associated flooring adhesive which contain [asbestos](#), are [nonfriable](#) unless the material is damaged to the extent that when dry it can be crumbled, pulverized or reduced to powder by hand pressure.

III.S.1.c. Provided that the requirements of Appendix B are followed as required, the requirements of following sections do not apply: section II (Certification Requirements), section III, subsections III.G. (Permits), III.H. (Abatement Sequence), III.I. (Critical Barrier Construction), III.J. (Additional Engineering Controls), III.K. (Decontamination Area), III.L. (Pre-cleaning of Surfaces), III.M. (Covering Fixed Objects), III.N. (Containment Components), III.O. (Abatement Methods), III.P. (Clearing Abatement Projects), and III.Q. (Tear-Down).

If a [person](#) grinds, mechanically chips, drills, sands, beadblasts, sandblasts, mechanically powders the material or otherwise damages such material to render it [friable](#), and the amount of the material exceeds the [trigger levels](#), then the following sections do apply: sections I (Definitions), II (Certification Requirements) and III (Abatement, Renovation and Demolition Projects).

#### III.S.1.d. Sheet Vinyl Flooring

If utilizing the work practices set forth in Appendix B for the [removal](#) of [sheet vinyl flooring](#), any Workers removing the flooring must have successfully completed an 8-hour employee training course which meets the training requirements for flooring Workers set forth in Appendix C to this regulation; furthermore, individuals supervising the removal of sheet vinyl flooring materials must have successfully completed the 8-hour employee training course and an additional training course for Supervisors which meets the training requirements for flooring Supervisors set forth in Appendix C to this regulation.

### III.S.2. Asbestos Cement Products

Transite roofing shingles, transite siding and other [asbestos](#) cement products that remain [nonfriable](#) during [removal](#) are subject to the requirements of subsection III.E. (Notifications). The transite roofing shingles, transite siding, or other asbestos cement products must be removed in accordance with paragraph III.S.4. (Other Nonfriable Asbestos-Containing Materials), below. If the transite roofing shingles, siding, other asbestos cement products become [friable](#) during removal, then sections

I. (Definitions), II. (Certification Requirements), and III. (Abatement, Renovation and Demolition Projects) apply.

### III.S.3. Asphaltic Materials

Tar impregnated roofing felts, asphalt roofing tiles, roofing asphalts, roofing mastics, and asphaltic pipeline coatings that are [nonfriable](#) and will remain nonfriable during abatement are exempt from this regulation.

### III.S.4. Other Nonfriable Asbestos-Containing Materials

III.S.4.a. Adequately wet the surface areas of the [nonfriable ACM](#) to prevent dust emissions throughout the removal process.

III.S.4.b. Remove the materials using hand removal methods or power tools that do not subject the material to [cutting](#), [grinding](#), sanding, beadblasting, sandblasting, or otherwise damage the material in such a way as to render it [friable](#).

III.S.4.c. Remove the material carefully with minimal breakage and disturbance.

III.S.4.d. If the [nonfriable](#) material is to be disposed of, then it must be transported to the landfill that will accept nonfriable [ACM](#). The landfill must be contacted prior to disposal to ensure that the nonfriable ACM is transported and packaged in accordance with the landfill's specific policy or regulation. If the materials have been rendered [friable](#), they must be disposed of as friable [asbestos-containing waste materials](#) pursuant to subsection III.R. (Waste Handling).

### III.S.5. Asbestos-Contaminated Soil

Any soil containing visible [friable asbestos-containing material](#) or any soil with greater than 1% [friable asbestos](#) content in the top 1" of soil is, for the purposes of this subsection, asbestos-contaminated soil. Where the surface area of the asbestos-contaminated soil exceeds the [trigger levels](#), or the volume of contaminated soil to be removed exceeds the volume equivalent of a 55-gallon drum, the [GAC](#) and the building owner shall comply with all of the requirements in subsection III.T. (Asbestos Spill Response), and shall remove gross, visible surface debris, and either remove the top 2" of soil, or seal the area with concrete or other impenetrable material.

### III.T. ASBESTOS SPILL RESPONSE

The following procedures apply to all [areas of public access](#), except [school buildings](#), in which there has been a release of [asbestos](#) fibers due to a breach of the containment barrier on an abatement project, or due to any cause other than abatement of asbestos. For fiber releases in [schools](#), see section IV. (School Requirements).

### III.T.1. Major Asbestos Spills

In the event of an [asbestos spill](#) involving greater than the [trigger levels](#), the building owner or contractor shall:

- III.T.1.a. Restrict access to the area and post warning signs to prevent entry to the area by [persons](#) other than those necessary to respond to the incident.
- III.T.1.b. Shut off or temporarily modify the air handling system to prevent the distribution of [asbestos](#) fibers to other areas.
- III.T.1.c. Immediately contact the [Division](#) by telephone, submit a notification in compliance with subsection III.E. (Notifications) and, if in an [area of public access](#), apply for a permit in accordance with subsection III.G. (Permits).
- III.T.1.d. Be exempted from the requirements to have a [certified](#) Supervisor on-site at all times, until such time as the immediate danger has passed. Any cleanup or [asbestos abatement](#) that must occur after the immediate danger has passed shall be supervised by a [person](#) certified by the [Division](#).
- III.T.1.e. Using [certified](#) Supervisors and certified Workers in accordance with section II. (Certification Requirements) of this Regulation, seal all openings between the contaminated and uncontaminated areas and establish negative air pressure within the contaminated area in accordance with paragraph III.J. (Air Cleaning and Negative Pressure Requirements). This is to be accomplished using polyethylene sheeting to cover areas such as doorways, windows, elevator openings, corridor entrances, grills, drains, grates, diffusers and skylights.
- III.T.1.f. [HEPA vacuum](#) or steam clean all carpets, drapes, upholstery, and other non-clothing fabrics in the contaminated area, or discard these materials.
- III.T.1.g. Launder or discard contaminated clothing in accordance with subsection III.R. (Waste Handling).
- III.T.1.h. [HEPA vacuum](#) or wet clean all surfaces in the contaminated area.
- III.T.1.i. Discard all materials in accordance with subsection III.R. (Waste Handling).
- III.T.1.j. Following completion of subparagraph III.T.1.a. through III.T.1.i. above, comply with [air monitoring](#) requirements as described in subsection III.P. (Clearing Abatement Projects); air samples shall be collected aggressively as described in 40 C.F.R. Part 763, Appendix A to Subpart E ([EPA 1995](#)), except that the air stream of the leaf blower shall not be directed at any [friable ACM](#) that remains in the area.
- III.T.1.k. Comply with any other measures deemed necessary by the [Division](#) to protect public health.

### III.T.2. Minor Asbestos Spills

In the event of an [asbestos spill](#) involving less than or equal to the [trigger levels](#), the building owner or contractor should take the following non-mandatory steps:

- III.T.2.a. Restrict entry to the area and post warning signs to prevent entry to the area by [persons](#) other than those necessary to respond to the incident.
- III.T.2.b. Shut off or temporarily modify the air handling system to prevent the distribution of fibers to other areas in the building.
- III.T.2.c. Seal all openings between the contaminated and uncontaminated areas. This is to be accomplished by using polyethylene sheeting to cover all areas such as windows, doorways, elevator openings, corridor entrances, drains, grills, grates, diffusers and skylights.
- III.T.2.d. [HEPA vacuum](#) or steam clean all carpets, draperies, upholstery and other non-clothing fabrics in the contaminated area, or discard all contaminated materials in accordance with subsection III.R. (Waste Handling).
- III.T.2.e. Launder or discard contaminated clothing in accordance with subsection III.R. (Waste Handling).
- III.T.2.f. [HEPA vacuum](#) or wet clean all non-fabric surfaces in the contaminated area.
- III.T.2.g. Following completion of subparagraphs III.T.2.a. through III.T.2.f. above, conduct [air monitoring](#) as described in paragraph III.P.3. (Final Clearance Air Monitoring and Sample Analyses); air samples shall be collected aggressively as described in 40 C.F.R. Part 763, Appendix A to Subpart E ([EPA](#) 1995), except that the air stream of the leaf blower shall not be directed at any [friable ACM](#) that remains in the [work area](#).

### III.U. MAXIMUM ALLOWABLE ASBESTOS LEVEL

At any time, the maximum allowable asbestos level (MAAL) shall not be exceeded in any [area of public access](#).

All [air monitoring](#) required under this regulation shall be performed by [certified Air Monitoring Specialists independent](#) of the [GAC](#) to avoid possible conflict of interest.

#### III.U.1. Monitoring for the MAAL

##### III.U.1.a. During Normal Occupancy

For purposes of this paragraph III.U.1, [air monitoring](#) shall be conducted during normal occupancy and samples shall not be collected in an aggressive manner.

### III.U.1.b. During Abatement

#### III.U.1.b.(i). Exhausting NAMs in a Building

If air from [negative air machines \(NAMs\)](#) must be exhausted to the interior of the building, air samples must be taken and analyzed by [PCM](#) or any equivalent method approved by the [Division](#) at least every day and meet the requirements of subsection III.U. (Maximum Allowable Asbestos Level) to ensure that there is no breach in the filtering system. In the event that the maximum allowable [asbestos](#) level is exceeded, all of the requirements of subsection III.T. (Asbestos Spill Response) must be met.

#### III.U.1.b.(ii). Outside Containment (Non-mandatory)

In the event that airborne fiber levels outside a containment in an [area of public access](#) exceed the [MAAL](#) when analyzed by [PCM](#), the [GAC](#) shall either treat the affected area as an [asbestos spill](#) and comply with all the requirements in subsection III.T. (Asbestos Spill Response) or, reanalyze the samples by [transmission electron microscopy](#) analysis in accordance with 40 C.F.R. Part 763, Appendix A to Subpart E ([EPA](#) 1995), within 24 hours. If the MAAL is exceeded by [TEM](#), comply with section III.T. (Asbestos Spill Response).

### III.U.2. The Maximum Allowable Asbestos Level (MAAL)

#### III.U.2.a. PCM

If [PCM](#) is used as the method of analysis the standard is 0.01 fibers per cubic centimeter of air (f/cc), which is equivalent to 10,000 fibers per cubic meter of air (f/m<sup>3</sup>). The [NIOSH](#) 7400 Method entitled "Fibers" published in the NIOSH Manual of Analytical Methods, 3rd Edition, Second Supplement, August 1987, shall be used to analyze samples. The number of samples to be taken shall be determined by the [certified Air Monitoring Specialist](#).

#### III.U.2.b. TEM

Where [TEM](#) is used as the method of analysis, the standard is 70 structures/millimeter<sup>2</sup> (s/mm<sup>2</sup>). TEM analysis shall be conducted pursuant to the protocol in 40 C.F.R. Part 763, Appendix A to Subpart E ([EPA](#) 1995).

#### III.U.2.c. Elevated Ambient Levels

Notwithstanding the provisions of clauses III.U.1.b.i. and III.U.1.b.ii. above, if the [asbestos](#) level in the outside ambient air which is adjacent to an asbestos project site or [area of public access](#) exceeds 70 s/mm<sup>2</sup> using [TEM](#) analysis or 0.01 fibers per cubic centimeter of air (10,000 f/m<sup>3</sup>) using [PCM](#) analysis, whichever is applicable, the existing asbestos level in such air shall be the maximum allowable asbestos level.

### III.U.3. What to do if the MAAL is Exceeded

#### III.U.3.a. Second Set by TEM

In the event that airborne [asbestos](#) fiber levels exceed the [MAAL](#) when analyzed by [PCM](#), a second set of samples may be collected during normal occupancy, analyzed by [transmission electron microscopy](#) analysis, and calculated as an eight-hour time-weighted average ([TWA](#)) in accord with 29 C.F.R. Part 1910.1000(d)(1)(i), before any order of abatement is issued. The [TEM](#) sample(s) shall be collected in the same location(s) as the original PCM sample(s) and analyzed within 24 hours of the PCM sample(s).

#### III.U.3.b. Outside Containment

In the event that airborne fiber levels outside a containment in an [area of public access](#) exceed the [MAAL](#) when analyzed by [PCM](#), the GAC shall either treat the affected area as an [asbestos spill](#) and comply with all the requirements in subparagraph III.T. (Asbestos Spill Response) or, reanalyze the samples by [transmission electron microscopy](#) analysis in accordance with 40 C.F.R. Part 763, Appendix A to Subpart E ([EPA 1995](#)), within 24 hours. If the MAAL is exceeded by [TEM](#), comply with subparagraph III.T. (Asbestos Spill Response).

### III.V. SPECIAL REMOVAL METHODS

This subsection III.V. applies to [asbestos abatement](#) projects in [areas of public access](#) where the amount of [asbestos-containing material](#) that will be abated exceeds the [trigger levels](#).

#### III.V.1. Glovebag Removal

[Glovebag](#) removal methods shall only be allowed where the glovebag can be installed such that it completely surrounds the [ACM](#) to be removed without causing a fiber release.

III.V.1.a. Glovebags shall be at least 6 mil polyethylene in thickness and shall be seamless at the bottom.

III.V.1.b. Glovebags shall not be used in situations where the glovebag could come into contact with surfaces that exceed 150° Fahrenheit.

III.V.1.c. Glovebags may be used only once and may not be moved.

III.V.1.d. For glovebag removals the GAC shall:

III.V.1.d.(i). erect [secondary containment](#) barriers where the amount of [ACM](#) to be removed in a [functional space](#) exceeds three (3) linear or three (3) square feet. In the event of a spill or a breach of the glovebag, the entire area

enclosed by the secondary containment shall be cleaned utilizing [HEPA vacuuming](#) and wet wiping with all debris, filters, mop heads, and cloths disposed of as [ACWM](#) in leak tight containers.

- III.V.1.d.(ii). tape or otherwise seal the glovebag to the area from which [asbestos](#) is to be removed. Glovebags shall be smoke tested for leaks and any leaks sealed prior to use.
- III.V.1.d.(iii). adequately wet, then remove, the [asbestos-containing material](#) from the surface.
- III.V.1.d.(iv). adequately wet any [asbestos-containing material](#) that has fallen from the surface into the enclosed bag using an airless sprayer and [amended water](#), or other materials or equipment equally effective in wetting.
- III.V.1.d.(v). thoroughly clean and wet wipe the surface until no traces of [asbestos-containing material](#) can be seen.
- III.V.1.d.(vi). encapsulate the rough edges of any [asbestos-containing material](#) that will remain on the surface after the glovebag has been removed. This shall be done prior to the removal of the glovebag.
- III.V.1.d.(vii). evacuate the air from the glovebag using a [HEPA filter](#)-equipped vacuum prior to removing the glovebag.
- III.V.1.d.(viii). ensure that the final visual inspection and clearance [air monitoring](#) requirements of subsection III.P. (Clearing Abatement Projects) are met.
- III.V.1.d.(ix). handle and dispose of all waste materials as required in subsection III.R. (Waste Handling).

### III.V.2. Facility Component Removal

Only those [facility components](#) in which the [ACM](#) is well adhered to the component may be taken out of the [facility](#) as units or in sections and be exempt from the containment requirements in subsection III.N. (Containment Components) provided that the [GAC](#):

- III.V.2.a. [Adequately wet](#) the [facility component](#) pursuant to subparagraph III.O.1.a.(i). (Wetting) then wrap the facility component in six (6) mil polyethylene prior to removing the facility component; and
- III.V.2.b. Ensure that the abatement project is cleared as required in subsection III.P. (Clearing Abatement Projects) and that the [ACWM](#) is disposed of as required in subsection III.R. (Waste Handling). NOTE: The use of a [secondary containment](#) to facilitate the required air clearance monitoring is recommended, but not required.

- III.V.2.c. Once the components are taken out of the [facility](#), if the components are to be [stripped](#), comply with sections I. (Definitions), II. (Certification Requirements) and III. (Abatement, Renovation and Demolition Projects).

### III.W. STRUCTURALLY UNSOUND BUILDINGS

For facilities described in subparagraph III.E.1.e., the [Division](#) may suspend any abatement work practice requirements, the implementation of which may endanger personnel who will be removing [asbestos](#) from the [facility](#). The GAC shall apply for a variance from the Division in accordance with the requirements of subsection III.F. (Alternative Procedures and Variances). During wrecking operations, that portion of the facility that contains [friable asbestos-containing material](#) must be kept adequately wet commencing from prior to the [demolition](#) through delivery of the [demolition](#) debris to a landfill that will accept [friable ACM](#).

### III.X. EXEMPTIONS

The following sections of the regulation contain exemptions from certain requirements. Please refer to the indicated section for the specific details of the exemption.

- If the [asbestos-containing material](#) to be abated is less than the [trigger levels](#), then only subsection III.R. (Waste Handling) applies in section III.
- Inspection requirements may be exempt if an architect or Building Inspector certifies a building constructed after October 12, 1988 to be asbestos-free. See subparagraph III.A.1.d.
- If you own a [SFRD](#) that is your primary residence and you choose to do the abatement yourself, certification is not required. See subparagraph III.B.1.c.
- A Project Manager doesn't need to be [independent](#) of the [GAC](#) if the project manager is working in-house. See paragraph III.D.2.
- If you own [SFRD](#), which is your primary residence, you may opt out of having your SFRD deemed an [area of public access](#). See paragraph III.E.2.
- There are three situations in which a [NAM](#) does not have to be fitted with a [HEPA](#) filter. See subparagraph III.J.1.c.
- Certain materials are exempted from many of the abatement requirements. See subsection III.S (Abatement of Special Materials).
- During an emergency, the requirement for a certified Supervisor to be on-site may be temporarily suspended. See subparagraph III.T.1.d.
- While performing facility component removal, full containment is not required. See paragraph III.V.2 (Facility Component Removal).

All underlined text in this regulation indicates defined terms.

#### IV. SCHOOL REQUIREMENTS

##### IV.A. SCOPE AND PURPOSE

The requirements in this section of the regulation mirrors the Asbestos Hazard Emergency Response Act of 1986 (AHERA) (15 U.S.C. 2646) that was enacted to identify, manage and reduce exposure to asbestos in schools.

This section of the regulation 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 Colorado Department of Public Health and Environment, Air Pollution Control Division by October 12, 1988, or if a deferral is applied for and received from the Division, May 9, 1989. The LEA must 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 certified to conduct inspections, reinspections, develop management plans, or perform response actions. The rule also includes recordkeeping requirements. LEAs 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 the EPA Regional Asbestos Coordinator or the Division for assistance in complying with this rule.

- IV.A.1. Local education agencies must provide for the transportation of asbestos in accordance with section III of this regulation. Disposal of asbestos-containing waste is governed by rules promulgated by the Colorado Board of Health, and implemented by the Department's Hazardous Materials and Waste Management Division.

##### IV.B. GENERAL LEA RESPONSIBILITIES

Each LEA shall:

- IV.B.1. 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 section IV of this Regulation No. 8.
- IV.B.2. Ensure that all custodial and maintenance employees are properly trained as required by this section IV and other applicable Federal and/or State regulations (e.g., the Occupational Safety and Health Administration asbestos standard for construction, and the EPA Worker protection rule.)
- IV.B.3. 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.
- IV.B.4. 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](#). Documentation of these notifications shall become part of the management plan.
- IV.B.5. Ensure that warning labels are posted in accordance with subsection IV.L.(Warning Labels).
- IV.B.6. Ensure that management plans are available for inspection and notification of such availability has been provided as specified in the management plan under subsection IV.J. (School Management Plans)
- IV.B.7. Designated Person
- IV.B.7.a. Designate a [person](#) to ensure that requirements under this section are properly implemented.
- IV.B.7.b. Ensure that the designated [person](#) receives adequate training to perform duties assigned under section IV.B. Such training shall provide, as necessary, basic knowledge of:
- IV.B.7.c. Health effects of [asbestos](#).
- IV.B.7.c.(i). Detection, identification, and [assessment](#) of [ACM](#).
- IV.B.7.c.(ii). Options for controlling [ACM](#).
- IV.B.7.c.(iii). [Asbestos](#) management programs.
- IV.B.7.c.(iv). Relevant Federal and State regulations concerning [asbestos](#), including those in this [Commission](#) Regulation No. 8 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.
- IV.B.8. Consider whether any conflict of interest may arise from the interrelationship among [certified](#) personnel and whether that should influence the selection of certified personnel to perform activities under this section.

## IV.C. INSPECTION AND REINSPECTION

### IV.C.1. Inspection

- IV.C.1.a. Except as provided in subparagraph b below, before October 12, 1988 or by May 9, 1989, if a deferral has been applied for and received from the [Division](#), 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 ACM](#).
- IV.C.1.b. 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 c and d below 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.
- IV.C.1.c. Each inspection shall be made by a [certified](#) Inspector.
- IV.C.1.d. For each area of a [school building](#), except as excluded under subsection IV.M. (Exclusions), each [person](#) performing an inspection shall:
- IV.C.1.d.(i). Visually inspect the area to identify the locations of all suspected [ACM](#).
  - IV.C.1.d.(ii). Touch all suspected [ACM](#) to determine whether they are [friable](#).
  - IV.C.1.d.(iii). Identify all [homogeneous areas](#) of [friable](#) suspected [ACBM](#) and all homogeneous areas of [nonfriable](#) suspected [ACM](#).
  - IV.C.1.d.(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 subsections IV.D. (Sampling) and IV.E. (Analysis).
  - IV.C.1.d.(v). Assess, under subsection IV.F. (Assessment), [friable](#) material in areas where samples are collected, friable material in areas that are assumed to be [ACM](#), and [friable ACM](#) identified during a previous inspection.
  - IV.C.1.d.(vi). Record the following and submit to the [person](#) designated under subsection IV.B. (General LEA Responsibilities) a copy of such record for inclusion in the management plan within 30 days of the inspection:
    - IV.C.1.d.(vi).(A). An inspection report with the date of the inspection signed by each [certified person](#) making the inspection, and his or her certification number.
    - IV.C.1.d.(vi).(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](#).

IV.C.1.d.(vi).(C). A description of the manner used to determine sampling locations, the name and signature of each [certified](#) Inspector who collected the samples, and his or her certification number.

IV.C.1.d.(vi).(D). A list of whether the [homogeneous areas](#) identified under subclause IV.C.1.d.(vi)(B) above are [surfacing material](#), [thermal system insulation](#), or [miscellaneous material](#).

IV.C.1.d.(vi).(E). [Assessments](#) made of [friable](#) material, the name and signature of each [certified](#) Inspector making the assessment, and his or her certification number.

#### IV.C.2. Reinspection

IV.C.2.a. At least once every three years after a management plan is in effect, each [LEA](#) 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.

IV.C.2.b. Each inspection shall be made by a [certified](#) Inspector.

IV.C.2.c. For each area of a [school building](#), each [person](#) performing a reinspection shall:

IV.C.2.c.(i). Visually reinspect, and reassess, under subsection IV.F. (Assessment) the condition of all [friable](#) known or assumed [ACBM](#).

IV.C.2.c.(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.

IV.C.2.c.(iii). Identify any [homogeneous areas](#) with material that has become [friable](#) since the last inspection or reinspection.

IV.C.2.c.(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 subsections IV.D. (Sampling) and IV.E. (Analysis).

IV.C.2.c.(v). Assess, under subsection IV.F. (Assessment), 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](#).

- IV.C.2.c.(vi). Reassess, under subsection IV.F. (Assessment), the condition of [friable](#) known or assumed [ACBM](#) previously identified.
- IV.C.2.c.(vii). Record the following and submit to the [person](#) designated under subsection IV.B. (General LEA Responsibilities), a copy of such record for inclusion in the management plan within 30 days of the reinspection:
- IV.C.2.c.(vii).(A). The date of the reinspection, the name and signature of the [person](#) making the reinspection, his or her certification number, and any changes in the condition of known or assumed [ACBM](#).
- IV.C.2.c.(vii).(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 [certified](#) Inspector who collected the samples, and his or her certification number.
- IV.C.2.c.(vii).(C). Any [assessments](#) or [reassessments](#) made of [friable](#) material, the name and signature of the [certified](#) Inspector making the assessments, and his or her certification number.

#### IV.C.3. 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.

#### IV.D. SAMPLING

##### IV.D.1. Surfacing Material

A [certified](#) 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:

- IV.D.1.a. At least three bulk samples shall be collected from each [homogeneous area](#) that is 1,000 ft<sup>2</sup>, or less, except as provided in subparagraph IV.E.3.b.
- IV.D.1.b. At least five bulk samples shall be collected from each [homogeneous area](#) that is greater than 1,000 ft<sup>2</sup> but less than or equal to 5,000 ft<sup>2</sup>, except as provided in subparagraph IV.E.3.b.
- IV.D.1.c. At least seven bulk samples shall be collected from each [homogeneous area](#) that is greater than 5,000 ft<sup>2</sup>, except as provided in subparagraph IV.E.3.b.

IV.D.1.d. Sampling of [friable surfacing materials](#) should follow the guidance provided in the [EPA](#) publication "Simplified Sampling Scheme for Friable Surfacing Materials" (EPA 560/5-85-030a) (1985).

#### IV.D.2. Thermal System Insulation

IV.D.2.a. Except as provided in paragraphs IV.D.2.b. through IV.D.2.d. below, a [certified](#) 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](#).

IV.D.2.b. 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.

IV.D.2.c. 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 subparagraph IV.E.3.b., analysis.

IV.D.2.d. Bulk samples are not required to be collected from any [homogeneous area](#) where the [certified](#) Inspector has determined that the [thermal system insulation](#) is fiberglass, foam glass, rubber, or other non-[ACBM](#).

#### IV.D.3. Miscellaneous Material

In a manner sufficient to determine whether material is [ACM](#) or not ACM, a [certified](#) Inspector shall collect bulk samples from each [homogeneous area](#) of [friable miscellaneous material](#) that is not assumed to be ACM.

#### IV.D.4. Nonfriable suspected ACBM

If any [homogeneous area](#) of [nonfriable](#) suspected [ACBM](#) is not assumed to be [ACM](#), then a [certified](#) 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.

#### IV.E. ANALYSIS

IV.E.1. Local education agencies shall have bulk samples, collected under subsection IV.D. (Sampling) and submitted for analysis, analyzed for [asbestos](#) using laboratories accredited by the National Institute of Standards and Technology ([NIST](#)). Local education agencies shall use laboratories which have received interim accreditation for [polarized light microscopy analysis](#) under the [EPA](#) Interim Asbestos Bulk Sample Analysis Quality Assurance Program until the National Institute of Standards and Technology (NIST) [PLM](#) laboratory accreditation program for PLM is operational.

IV.E.2. Bulk samples shall not be composited for analysis and shall be analyzed for [asbestos](#) content by [PLM](#), using the United States Environmental Protection Agency's August 1994 Method [EPA/600/R-93/116](#), "Method for the Determination of Asbestos in Bulk Building Materials."

IV.E.3. Interpreting Bulk Sample Results

IV.E.3.a. 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 one percent or less.

IV.E.3.b. 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 one percent.

IV.E.4. 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 subsection IV.B. (General LEA Responsibilities) for inclusion into the management plan within 30 days of the analysis.

IV.F. ASSESSMENT

IV.F.1. [Untitled]

IV.F.1.a. For each inspection and reinspection conducted under paragraph IV.C.1. and IV.C.2. (Inspections/Reinspections), and previous inspections specified under subsection IV.M. (Exclusions), the [LEA](#) shall have a [certified](#) Inspector provide a written [assessment](#) of all [friable](#) known or assumed [ACBM](#) in the [school building](#).

IV.F.1.b. Each [certified](#) Inspector providing a written [assessment](#) shall sign and date the assessment, provide his or her certification number, and submit a copy of the assessment to the [person](#) designated under subsection IV.B. (General LEA Responsibilities) for inclusion in the management plan within 30 days of the assessment.

IV.F.2. 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:

IV.F.2.a. [Damaged or significantly damaged thermal system insulation ACM.](#)

IV.F.2.b. [Damaged friable surfacing ACM.](#)

IV.F.2.c. [Significantly damaged friable surfacing ACM.](#)

IV.F.2.d. [Damaged](#) or [significantly damaged friable miscellaneous ACM.](#)

- IV.F.2.e. [ACBM](#) with [potential](#) for damage.
- IV.F.2.f. [ACBM](#) with [potential](#) for significant damage.
- IV.F.2.g. Any remaining [friable ACBM](#) or friable suspected [ACBM](#).

IV.F.3. [Assessment](#) may include the following considerations:

- IV.F.3.a. Location and the amount of the material, both in total quantity and as a percentage of the [functional space](#).
- IV.F.3.b. Condition of the material, specifying:
  - IV.F.3.b.(i). Type of damage or significant damage (e.g., flaking, blistering, water damage, or other signs of physical damage).
  - IV.F.3.b.(ii). Severity of damage (e.g., major flaking, severely torn jackets, as opposed to occasional flaking, minor tears to jackets).
  - IV.F.3.b.(iii). Extent or spread of damage over large areas or large percentages of the [homogeneous area](#).
- IV.F.3.c. Whether the material is [accessible](#).
- IV.F.3.d. The material's potential for disturbance.
- IV.F.3.e. Known or suspected causes of damage or significant damage (e.g., [air erosion](#), vandalism, [vibration](#), water).
- IV.F.3.f. [Preventive measures](#), which might eliminate the reasonable likelihood of undamaged [ACM](#) from becoming significantly damaged.
- IV.F.3.g. The [LEA](#) shall select a [person certified](#) 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 [LEA](#) appropriate [response actions](#). The certified person shall sign and date the recommendation, and provide his or her certification number, and submit a copy of the recommendation to the person in the management plan.

#### IV.G. RESPONSE ACTIONS

- IV.G.1. The [LEA](#) shall select and implement in a timely manner the appropriate [response actions](#) in this section consistent with the [assessment](#) conducted in subsection IV.F. The response actions selected shall be sufficient to protect human health and the environment. The LEA 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 [ACBM](#) from a

school building at any time, should removal be the preferred response action of the LEA.

- IV.G.2. If damaged or significantly damaged thermal system insulation ACM is present in a building, the LEA shall:
- IV.G.2.a. At least repair the damaged area.
  - IV.G.2.b. Remove the damaged material if it is not feasible, due to technological factors, to repair the damage.
  - IV.G.2.c. Maintain all thermal system insulation ACM and its covering in an intact state and undamaged condition.
- IV.G.3. Selecting the Response Action
- IV.G.3.a. If damaged friable surfacing ACM or damaged friable miscellaneous ACM is present in a building, the LEA shall select from among the following response actions: encapsulation, enclosure, removal, or repair of the damaged material.
  - IV.G.3.b. In selecting the response action from among those, which meet the definitional standards in subsection IV.I. (Training & Periodic Surveillance) the LEA 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 LEA may then consider local circumstances, including occupancy and use patterns within the school building, and its economic concerns, including short- and long-term costs.
- IV.G.4. If significantly damaged friable surfacing ACM or significantly damaged friable miscellaneous ACM is present in a building the LEA shall:
- IV.G.4.a. Immediately isolate the functional space and restrict access, unless isolation is not necessary to protect human health and the environment.
  - IV.G.4.b. 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.
- IV.G.5. If any friable surfacing ACM, thermal system insulation ACM, or friable miscellaneous ACM that has potential for damage is present in a building, the LEA shall at least implement an operations and maintenance (O&M) program, as described under subsection IV.H. (Operations & Maintenance).
- IV.G.6. 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 LEA shall:

- IV.G.6.a. Implement an [O&M](#) program, as described under subsection IV.H. (Operations & Maintenance).
- IV.G.6.b. Institute [preventive measures](#) appropriate to eliminate the reasonable likelihood that the [ACM](#) or its covering will become significantly damaged, deteriorated, or delaminated.
- IV.G.6.c. 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 environment. Immediately isolate the area and restrict access if necessary to avoid an imminent and substantial endangerment to human health or the environment.
- IV.G.7. [Response actions](#) including [removal](#), [encapsulation](#), [enclosure](#), or [repair](#), other than small-scale, short-duration repairs, shall be designed and conducted by [persons certified](#) to design and conduct response actions.
- IV.G.8. The requirements of this section IV of Regulation No. 8 in no way supersede the Worker protection and work practice requirements under 29 C.F.R. 1926.58 (Occupational Safety and Health Administration (OSHA 1988) Asbestos, 40 C.F.R. Part 763, Subpart G ([EPA](#) 1995) (Asbestos Abatement Projects), and 40 C.F.R. Part 61, Subpart M (EPA 1995) (National Emission Standards for Hazardous Air Pollutants-Asbestos) and section III of this regulation.
- IV.G.9. Completion of Response Actions.
- IV.G.9.a. At the conclusion of any action to remove, encapsulate, or enclose [ACBM](#) or material assumed to be [ACBM](#), a [person](#) designated by the [LEA](#) shall visually inspect each [functional space](#) where such action was conducted to determine whether the action has been properly completed.
- IV.G.9.b. Collection and Analysis of Air Samples
- IV.G.9.b.(i). A [person](#) designated by the [LEA](#) shall collect air samples using aggressive sampling as described in 40 C.F.R. 763, Appendix A to Subpart E ([EPA](#) 1995), to monitor air for clearance after each [removal](#), [enclosure](#) and [encapsulation](#) project involving [ACBM](#), except for projects that are less than three square or three linear feet.
- IV.G.9.b.(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](#) or, under circumstances permitted in this section, laboratories enrolled in the American Industrial Hygiene Association Proficiency Analytical Testing Program for [phase contrast microscopy](#).
- IV.G.9.b.(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 40 C.F.R. 763, Appendix A to Subpart E ([EPA 1995](#)).

- IV.G.9.c. Except as provided in subparagraphs IV.G.9.d, IV.G.9.e., IV.G.9.f., or IV.G.9.g of this subsection, 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 40 C.F.R. 763, Appendix A to Subpart E ([EPA 1995](#)), is not statistically significantly different, as determined by the Z-test calculation found in Appendix A 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 is below the filter background level, as defined in Appendix A, of 70 structures per square millimeter (70 s/mm<sup>2</sup>).
- IV.G.9.d. 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 25mm 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 40 C.F.R. 763, Appendix A to Subpart E (1995), 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/mm<sup>2</sup>). If the average concentration of asbestos of the five air samples within the affected functional space exceeds 70 s/mm<sup>2</sup>, 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 subparagraph IV.G.9.c, IV.G.9.e., IV.G.9.f., or IV.G.9.g of this section are met.
- IV.G.9.e. At any time, a [LEA](#) may analyze [air monitoring](#) samples collected for clearance purposes by [phase contrast microscopy](#) to confirm completion of [removal](#), [encapsulation](#), or [enclosure](#) of [ACBM](#) that is greater than small-scale, short-duration and less than or equal to the [trigger levels](#). 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 quantification for [PCM](#) (0.01 fibers per cubic centimeter (0.01 [f/cm<sup>3</sup>](#), 10,000 [f/m<sup>3</sup>](#)) of air). The method is available at the Office of the Air Quality Control Commission.
- IV.G.9.f. Until October 7, 1989, a [LEA](#) may analyze [air monitoring](#) samples collected for clearance purposes by PCM to confirm completion of [removal](#), [encapsulation](#), or [enclosure](#) of [ACBM](#) that is less than or equal to 3,000 square

feet or 1,000 linear feet. The action shall be considered complete when the results of samples collected in the affected [functional space](#) and analyzed by [PCM](#) using the [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 quantification for [PCM](#) (0.01 fibers per cubic centimeter, 0.01  $f/cm^3$ , 10,000  $f/m^3$ ). The method is available at the Office of the Colorado Air Quality Control Commission.

IV.G.9.g. From October 8, 1989, to October 7, 1990, a [LEA](#) may analyze [air monitoring](#) samples collected for clearance purposes by [PCM](#) to confirm completion of [removal](#), [encapsulation](#), or [enclosure](#) of [ACBM](#) that is less than or equal to 1,500 square feet or 500 linear feet. The action shall be considered complete when the results of samples collected in the affected [functional space](#) and analyzed by [PCM](#) using the [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 quantification for [PCM](#) (0.01 fibers per cubic centimeter, 0.01  $f/cm^3$ , 10,000  $f/m^3$ ). The method is available at the Office of the Colorado Air Quality Control Commission.

IV.G.9.h. To determine the amount of [ACBM](#) affected under subparagraphs IV.G.9.e., IV.G.9.f., or IV.G.9.g of this subsection, the [LEA](#) 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 subparagraph IV.G.9.e., IV.G.9.f., or IV.G.9.g of this subsection.

IV.G.9.i. All air monitoring and final visual inspections required under this regulation shall be performed by certified Air Monitoring Specialists independent of the GAC to avoid possible conflict of interest.

## IV.H. OPERATIONS AND MAINTENANCE

### IV.H.1. Applicability

The [LEA](#) 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.

### IV.H.2. Cleaning

#### IV.H.2.a. Initial Cleaning

Unless the building has been cleaned using equivalent methods within the previous six 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 section IV.C.1. and before the initiation of any [response action](#), other than [O&M](#) activities or [repair](#), according to the following procedures:

IV.H.2.a.(i). [HEPA vacuum](#) or steam-clean all carpets.

IV.H.2.a.(ii). [HEPA vacuum](#) or wet-clean all other floor and all other horizontal surfaces.

IV.H.2.a.(iii). Dispose of all debris, filters, mop heads, and cloths in sealed, leak-tight containers.

#### IV.H.2.b. Additional Cleaning

The [certified](#) management planner shall make a written recommendation to the [LEA](#) whether additional cleaning is needed, and if so, the methods and frequency of such cleaning.

#### IV.H.3. Operations and Maintenance Activities

The [LEA](#) shall ensure that the procedures described below to protect building occupants shall be followed for any operations and maintenance activities disturbing [friable ACBM](#):

IV.H.3.a. 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.

IV.H.3.b. Post signs to prevent entry by unauthorized [persons](#).

IV.H.3.c. Shut off or temporarily modify the air-handling system and restrict other sources of air movement.

IV.H.3.d. Use work practices or other controls, such as, wet methods, protective clothing, [HEPA vacuums](#), mini-enclosures, glovebags, as necessary to inhibit the spread of any released fibers.

IV.H.3.e. Clean all fixtures or other components in the immediate [work area](#).

IV.H.3.f. Place the [asbestos debris](#) and other cleaning materials in a sealed, leak-tight container.

#### IV.H.4. 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 certified](#) to design response actions and conducted by persons certified to conduct response actions.

#### IV.H.5. Fiber Release Episodes

IV.H.5.a. Minor [fiber release episode](#) - The [LEA](#) 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](#)):

IV.H.5.a.(i). Thoroughly saturate the debris using wet methods.

IV.H.5.a.(ii). Clean the area, as described in subsection IV.H.2. of this section.

IV.H.5.a.(iii). Place the [asbestos debris](#) in a sealed, leak-tight container.

IV.H.5.a.(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 section IV.H.3. (Operations & Maintenance).

IV.H.5.b. Major [fiber release episode](#) - The [LEA](#) 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](#)):

IV.H.5.b.(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](#).

IV.H.5.b.(ii). Shut off or temporarily modify the air-handling system to prevent the distribution of fibers to other areas in the building.

IV.H.5.b.(iii). The [response action](#) for any major [fiber release episode](#) must be designed by [persons certified](#) to design response actions and conducted by persons certified to conduct response actions, as specified in subsection II.A. (General Requirements).

#### IV.I. TRAINING AND PERIODIC SURVEILLANCE

##### IV.I.1. Training

IV.I.1.a. The [LEA](#) 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 two 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. Annual refresher training shall be provided and documented in the management plan for the school. Training shall include, but not be limited to:

- IV.I.1.a.(i). Information regarding [asbestos](#) and its various uses and forms.
  - IV.I.1.a.(ii). Information on the health effects associated with [asbestos](#) exposure.
  - IV.I.1.a.(iii). Locations of [ACBM](#) identified throughout each [school building](#) in which they work.
  - IV.I.1.a.(iv). Recognition of damage, deterioration, and delamination of [ACBM](#).
  - IV.I.1.a.(v). Name and telephone number of the [person](#) designated to carry out general [LEA](#) responsibilities under subsection IV.B. (General LEA Responsibilities) and the availability and location of the management plan.
- IV.I.1.b. The [LEA](#) 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 subsection IV.I.1.a. above and 14 hours of additional training. Annual refresher training shall be provided and documented in the management plan for the school. Additional training shall include, but not be limited to:
- IV.I.1.b.(i). Descriptions of the proper methods of handling [ACBM](#).
  - IV.I.1.b.(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/OPTS-86-001), available from the office of the Colorado Air Quality Control Commission, and other personal protection measures.
  - IV.I.1.b.(iii). The provisions of section IV and Appendices A, B, C, and D of 52 Federal Register 41857-41898 (October 30, 1987), [EPA](#) regulations contained in 40 C.F.R. Part 763, Subpart G, and in 40 C.F.R. Part 61, Subpart M, and [OSHA](#) regulations contained in 29 C.F.R. 1926.1101.
  - IV.I.1.b.(iv). Hands-on training in the use of respiratory protection, other personal protection measures, and good work practices.
- IV.I.1.c. [LEA](#) 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.

#### IV.I.2. Periodic Surveillance

IV.I.2.a. At least once every six months after a management plan is in effect, each [LEA](#) 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.

IV.I.2.b. Each [person](#) performing periodic surveillance shall:

IV.I.2.b.(i). Visually inspect all areas that are identified in the management plan as [ACBM](#) or assumed ACBM.

IV.I.2.b.(ii). Record the date of the surveillance, his or her name, and any changes in the condition of the materials.

IV.I.2.b.(iii). Submit to the [person](#) designated to carry out general [LEA](#) responsibilities under subsection IV.B. (General LEA Responsibilities) a copy of such record for inclusion in the management plan.

#### IV.J. SCHOOL MANAGEMENT PLANS

##### IV.J.1. Submittal of Management Plans

IV.J.1.a. On or before October 12, 1988, or by May 9, 1989, if the [LEA](#) has applied for and received a deferral from the [Division](#) each LEA 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 in the form specified by the Division. The plan may be submitted in stages that cover a portion of the school buildings under the authority of the LEA. The fee for Division review of management plans will be \$45.00.

IV.J.1.b. If a building to be used as part of a [school](#) is leased or otherwise acquired after October 12, 1988, the [LEA](#) 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 [Division](#).

IV.J.1.c. If a [LEA](#) begins to use a building as a [school](#) after October 12, 1988, the LEA shall submit a management plan for the school to the [Division](#) prior to its use as a school.

IV.J.2. If the [Division](#) does not disapprove a management plan within 90 days after receipt of the plan, the [LEA](#) shall implement the plan.

IV.J.3. Each [LEA](#) must begin implementation of its management plan on or before July 9, 1989, and complete implementation in a timely fashion.

IV.J.4. Each [LEA](#) 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.

- IV.J.5. The management plan shall be developed by a [certified](#) management planner and shall include:
- IV.J.5.a. A list of the name and address of each [school building](#) and whether the school building contains [friable ACBM](#), [nonfriable ACBM](#), or friable and nonfriable suspected ACBM assumed to be [ACM](#).
  - IV.J.5.b. For each inspection conducted before December 14, 1987:
    - IV.J.5.b.(i). The date of the inspection.
    - IV.J.5.b.(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.
    - IV.J.5.b.(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.J.5.b.(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.
    - IV.J.5.b.(v). A description of [assessments](#), required to be made under section IV.F. 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, and Colorado certification number of each [certified person](#) making the [assessments](#).
  - IV.J.5.c. For each inspection and reinspection conducted under section IV.C. (Inspections & Reinspections):
    - IV.J.5.c.(i). The date of the inspection or reinspection and the name and signature, and the Colorado certification number of each [certified](#) Inspector performing the inspection or reinspection.
    - IV.J.5.c.(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.

- IV.J.5.c.(iii). A description of the manner used to determine sampling locations, and the name and signature of each [certified](#) Inspector collecting samples, and his or her Colorado certification number.
- IV.J.5.c.(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 paragraph IV.E.1. the date of analysis, and the name and signature of the [person](#) performing the analysis.
- IV.J.5.c.(v). A description of [assessments](#), required to be made under subsection IV.F. (Assessment), of all [ACBM](#) and suspected ACBM assumed to be [ACM](#), and the name, signature, and Colorado certification number of each [person](#) making the assessments.
- IV.J.5.d. The name, address, and telephone number of the [person](#) designated under subsection IV.B. (General LEA Responsibilities) to ensure that the duties of the [LEA](#) are carried out, and the course name, and dates and hours of training taken by that person to carry out the duties.
- IV.J.5.e. The recommendations made to the [LEA](#) regarding [response actions](#), under subsection IV.F. (Assessment), the name, signature, and his or her Colorado certification number.
- IV.J.5.f. 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.
- IV.J.5.g. A signed statement that the individual is [certified](#) under this Regulation No. 8 from each individual who inspects for [ACBM](#) or who will design or carry out [response actions](#), except for operations and maintenance.
- IV.J.5.h. 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 subsection IV.G. (Response Actions). This description shall be updated as response actions are completed.
- IV.J.5.i. A plan for reinspection under subsection IV.C. (Inspections & Reinspections) and a plan for operations and maintenance activities under subsection IV.H. (Operations & Maintenance), and a plan for periodic surveillance under subsection IV.I. (Training & Periodic Surveillance), a description of the recommendation made by the management planner regarding additional cleaning under subsection IV.H.2.b. (Additional Cleaning) as part of an operations and maintenance program, and the response of the [LEA](#) to that recommendation.

- IV.J.5.j. 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 that are planned or in progress.
- IV.J.5.k. An evaluation of the resources needed to complete [response actions](#) successfully and carry out reinspection, operations and maintenance activities, periodic surveillance and training.
- IV.J.5.l. The name of each consultant who contributed to the management plan, and a statement from each such consultant that the consultant is [certified](#) under Colorado State law, and a statement that the [person](#) is accredited by an [EPA](#) approved course (specify course title and sponsor) under section 206(c) of the Title II of [TSCA](#).
- IV.J.6. A [LEA](#) may require each management plan to contain a statement signed by a [certified](#) management plan developer that such plan is in compliance with this section IV (School Requirements). 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.
- IV.J.7. Availability of Management Plan
- IV.J.7.a. Upon submission of a management plan to the [Division](#), a [LEA](#) 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 [Division](#), the public, including teachers, other [school](#) personnel and their representatives, and parents. The LEA may charge a reasonable cost to make copies of management plans.
- IV.J.7.b. Each [LEA](#) 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 [Division](#), the public, including teachers, other [school](#) personnel and their representatives, and parents. The [LEA](#) may charge a reasonable cost to make copies of management plans.
- IV.J.7.c. 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 [Division](#), the public, including parents, teachers, and other school personnel and their representatives within five [working days](#) after receiving a request for inspection. The school may charge a reasonable cost to make copies of the management plan.

- IV.J.7.d. Upon submission of its management plan to the [Division](#) and at least once each [school](#) year, the [LEA](#) 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 employees, the LEA shall provide written notice to that relevant group of the availability of the management plan a description of the steps taken to notify such groups and a dated copy of the notification.
- IV.J.8. Records required under subsection IV.K. (Recordkeeping) shall be made by local education agencies and maintained as part of the management plan.
- IV.J.9. Each management plan must contain a true and correct statement, signed by the individual designated by the [LEA](#) under subsection IV.B. (General LEA Responsibilities) which certifies that the general, LEA responsibilities, as stipulated by subsection IV.B. (General LEA Responsibilities) have been met or will be met.
- IV.K. RECORDKEEPING
- IV.K.1. Records required under this section shall be maintained in a centralized location in the administrative office of both the [school](#) and the [LEA](#) as part of the management plan. For each [homogeneous area](#) where all [ACBM](#) has been removed, the LEA shall ensure that such records are retained for three years after the next reinspection required under subparagraph IV.C.2.a. or for an equivalent period.
- IV.K.2. For each [preventive measure](#) and [response action](#) taken for [friable](#) and [nonfriable](#) suspected [ACBM](#) assumed to be [ACM](#), the [LEA](#) shall provide:
- IV.K.2.a. 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 Colorado Certification numbers, and if [ACBM](#) is removed, the name and location of storage or disposal site of the [ACM](#).
- IV.K.2.b. The name and signature of any [person](#) collecting any air sample required to be collected at the completion of certain [response actions](#) specified by section IV.G.9. 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 clause IV.G.9.b.(ii).
- IV.K.3. For each [person](#) required to be trained under subparagraph IV.I.1.a. or b., the [LEA](#) 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.

- IV.K.4. For each time that periodic surveillance under subparagraph IV.I.2.a. is performed, the [LEA](#) shall record the name of each [person](#) performing the surveillance, the date of surveillance and any changes in the conditions of the materials.
- IV.K.5. For each time that cleaning under paragraph IV.H.2. (Cleaning) is performed, the [LEA](#) 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.
- IV.K.6. For each time that operations and maintenance activities under paragraph IV.H.3. (Operations & Maintenance Activities) are performed, the [LEA](#) 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](#).
- IV.K.7. For each time that major [asbestos](#) activity under paragraph IV.H.4. (Maintenance Activities) is performed the [LEA](#) shall provide the name and signature, and the Colorado Certification 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](#).
- IV.K.8. For each [fiber release episode](#) under paragraph IV.H.5. (Fiber Release Activities) the [LEA](#) 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](#).

#### IV.L. WARNING LABELS

The [LEA](#) 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:

- IV.L.1. [Friable](#) [ACBM](#) that was responded to by a means other than [removal](#).
- IV.L.2. [ACBM](#) for which no [response action](#) was carried out.
- IV.L.3. All labels shall be prominently displayed in readily visible locations and shall remain posted until the [ACBM](#) that is labeled is removed.
- IV.L.4. 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.

#### IV.M. EXCLUSIONS

- IV.M.1. A LEA shall not be required to perform an inspection under paragraph IV.C.1. (Inspections) in any [sampling area](#) or [homogeneous area](#) of a [school building](#) where:
- IV.M.1.a. A [certified](#) 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 Colorado Certification number and, within 30 days after such determination, submit a copy of the statement to the [person](#) designated under subsection IV.B. (General LEA Responsibilities) for inclusion in the management plan. However, a certified Inspector shall assess the friable ACBM under subsection IV.F. (Assessment).
  - IV.M.1.b. A [certified](#) 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 certification number and, within 30 days after such determination, submit a copy of the statement to the [person](#) designated under subsection IV.B. (General LEA Responsibilities) for inclusion in the management plan. However, a certified Inspector shall identify whether material that was nonfriable has become [friable](#) since that previous inspection and shall assess the newly-friable ACBM under subsection IV.F. (Assessment)
  - IV.M.1.c. Based on sampling records and inspection records, a [certified](#) 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 paragraph IV.C.1. (Inspections) 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.
    - IV.M.1.c.(i). The [certified](#) Inspector shall sign and date a statement, with his or her certification number, that the homogeneous or [sampling area](#) determined not to be [ACBM](#) was sampled in substantial compliance with paragraph IV.C.1. (Inspections).
    - IV.M.1.c.(ii). Within 30 days after the Inspector's determination, the [LEA](#) shall submit a copy of the Inspector's statement to the [Division](#) and shall include the statement in the management plan for that [school](#).
  - IV.M.1.d. The [Division](#) 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 paragraph IV.C.1. (Inspections). Such determination shall be included in the management plan for that [school](#).
  - IV.M.1.e. A [certified](#) 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 Colorado Certification number and, within 30 days of such determination, submit a copy of the statement to the [person](#) designated under subsection IV.B. (General LEA Responsibilities) for inclusion in the management plan. However, a certified 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 subsection IV.F. (Assessment).

- IV.M.1.f. Based on inspection records and contractor and clearance records, a [certified](#) 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 Colorado Certification number. The [LEA](#) shall submit a copy of the statement to the [Division](#) and shall include the statement in the management plan for that [school](#).
- IV.M.1.g. An architect or project engineer responsible for the construction of a new [school building](#) built after October 12, 1988, or a [certified](#) 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 [LEA](#) shall submit a copy of the signed statement of the architect, project engineer, or certified Inspector to the [Division](#) and shall include the statement in the management plan for that [school](#).
- IV.M.2. The exclusion, under subparagraphs IV.M.1.a. through IV.M.1.d. of this subsection, from conducting the inspection under paragraph IV.C.1. (Inspections) shall apply only to homogeneous or [sampling areas](#) of a [school building](#) that were inspected and sampled before October 17, 1987. The [LEA](#) shall conduct an inspection under paragraph IV.C.1. (Inspections) of all areas inspected before October 17, 1987, that were not sampled or were not assumed to be [ACM](#).
- IV.M.3. If [ACBM](#) is subsequently found in a homogeneous or [sampling area](#) of a LEA [local education agency](#) that had been identified as receiving an exclusion by a [certified](#) Inspector under subparagraphs IV.M.1.c., d., and e., of this section, or an architect, project engineer or certified Inspector under subparagraph IV.M.1.g of this section, the [LEA](#) shall have 180 days following the date of identification of [ACBM](#) to comply with this section IV (School Requirements).

All underlined text in this regulation indicates defined terms.

## V. STATE BUILDING REQUIREMENTS

### V.A. SCOPE AND PURPOSE

State agencies shall follow the assessment procedures prescribed by this section prior to conducting any response action for friable ACM in an area of public access that exceeds the trigger levels. The prescribed assessment procedures require state agencies to identify friable and potentially friable ACM; sample such materials; assess the condition of suspected ACM; and conduct air monitoring to determine the level of fibers in the air. In addition, state agencies are required to use individuals who have been certified as Inspectors and Management Planners (see section II) to complete the inspections and make recommendations to building managers as to the appropriate response action to be taken.

### V.B. GENERAL STATE AGENCY RESPONSIBILITIES

Each state agency shall:

V.B.1. Ensure that the activities of all persons who perform inspections or conduct asbestos abatement actions are carried out in accordance with sections I, II, III and V of this regulation.

#### V.B.2. Designated Asbestos Coordinator

V.B.2.a. Designate an asbestos coordinator to ensure that the requirements of this section are properly implemented.

V.B.2.b. Ensure that the asbestos coordinator receives adequate training to perform duties assigned under this section. Such training shall provide, as necessary, basic knowledge of:

V.B.2.b.(i). Health effects of asbestos.

V.B.2.b.(ii). Detection, identification, and assessment of ACM.

V.B.2.b.(iii). Options for controlling ACM.

V.B.2.b.(iv). Asbestos management programs.

V.B.2.b.(v). Relevant Federal and State regulations concerning asbestos, including those in this Regulation and those of the U.S. Department of Transportation and the U.S. Environmental Protection Agency.

V.B.2.c. A person who has received "Inspector" training and certification according to section II (Certification Requirements) is deemed to be adequately trained to function as the asbestos coordinator.

## V.C. INSPECTIONS

- V.C.1. Prior to conducting an [asbestos response action](#) in an [area of public access](#) that exceeds the [trigger levels](#) in any [state-owned or state-leased building](#), state agencies shall inspect the affected area of such buildings to identify all locations of [friable](#) and potentially [friable ACM](#). Potentially friable [ACM](#) is any ACM that can reasonably be expected to become friable as a result of anticipated [renovation](#) or [demolition](#) work.
- V.C.2. Each inspection shall be made by a [certified](#) Inspector.
- V.C.3. Except as excluded under subsection V.H. (Exclusion), the [person](#) performing an inspection under this section shall:
- V.C.3.a. Visually inspect the area to identify the locations of all suspected [ACM](#).
  - V.C.3.b. Touch all suspected [ACM](#) to determine whether they are [friable](#).
  - V.C.3.c. Identify all [homogeneous areas](#) of [friable](#) suspected [ACM](#) and all homogeneous areas of potentially friable suspected ACM.
  - V.C.3.d. Pursuant to subsection V.D. (Sampling); collect bulk samples from each suspect [homogeneous area](#) and submit such samples for analysis pursuant to subsection V.E. (Analysis).
  - V.C.3.e. Develop a written [assessment](#) of the extent, condition and types of materials in the area. Such assessment shall be performed pursuant to subsection V.F. (Assessment).
  - V.C.3.f. Record the following and submit to the [Asbestos](#) Coordinator under subsection V.B. (General State Agency Responsibilities), a copy of such record.
    - V.C.3.f.(i). An inspection report with the date of the inspection signed by the [certified person](#) making the inspection, and his or her certification number.
    - V.C.3.f.(ii). An inventory of the locations of the [homogeneous areas](#) where samples are collected, exact locations where each bulk sample is collected, and dates that samples are collected.
    - V.C.3.f.(iii). A list identifying each [homogeneous area](#) listed under paragraph c. above as [surfacing material](#), [thermal system insulation](#), or [miscellaneous material](#).
    - V.C.3.f.(iv). [Assessments](#) made of [friable](#) and potentially friable material, the name and signature of each [certified](#) Inspector making the assessment, and his or her certification number.

## V.D. SAMPLING

V.D.1. Surfacing material

Prior to conducting an [asbestos response action](#) in an [area of public access](#) that exceeds the [trigger levels](#) in any [state-owned or state-leased building](#), the State Agency shall insure that a [certified](#) Inspector shall collect, in a randomly distributed manner that is representative of the [homogeneous area](#), bulk samples from each [homogeneous area](#) of suspect [friable](#) and potentially friable, [surfacing material](#). The samples shall be collected as follows:

- V.D.1.a. At least three bulk samples shall be collected from each [homogeneous area](#) that is 1,000 square feet or less.
- V.D.1.b. At least five bulk samples shall be collected from each [homogeneous area](#) that is greater than 1,000 square feet but less than or equal to 5,000 square feet.
- V.D.1.c. At least seven bulk samples shall be collected from each [homogeneous area](#) that is greater than 5,000 square feet.

V.D.2. Thermal system insulation

- V.D.2.a. Except as provided in subparagraphs b., c. and d. of this section, a [certified](#) 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](#).
- V.D.2.b. Collect at least one bulk sample from each [homogeneous area](#) of patched [thermal system insulation](#) if the patched section is less than 6 linear or square feet.
- V.D.2.c. In a manner sufficient to determine whether the material is [ACM](#) or not ACM, collect bulk samples from each insulated mechanical system where cement or plaster is used on fittings such as tees, elbows, or valves. An area may be determined to contain ACM based on a single positive [asbestos](#) sample as described in subparagraph V.E.3.b.
- V.D.2.d. Bulk samples are not required to be collected from any [homogeneous area](#) where the [certified](#) Inspector has determined that the [thermal system insulation](#) is fiberglass, foam glass, rubber, or other non-[ACM](#).

V.D.3. Miscellaneous material

In a manner sufficient to determine whether material is [ACM](#) or not ACM, a [certified](#) Inspector shall collect bulk samples from each [homogeneous area](#) of [friable miscellaneous material](#) that is suspected to be ACM.

V.D.4. The state agency shall perform air sampling prior to any [response action](#) that in an [area of public access](#) exceeds the [trigger levels](#). The procedures described in paragraph III.U. (Maximum Allowable Asbestos Level), shall be followed.

V.E. ANALYSIS

V.E.1. State agencies shall have bulk samples, collected under subsection V.D. (Sampling) analyzed for [asbestos](#) by laboratories accredited by the National Bureau of Standards (NBS). State agencies shall use laboratories which have received interim accreditation for [polarized light microscopy](#) analysis under the [EPA](#) Interim Asbestos Bulk Sample Analysis Quality Assurance Program until the [NBS PLM](#) laboratory accreditation program for PLM is operational.

V.E.2. Bulk samples shall not be composited for analysis.

V.E.3. Interpreting Bulk Sample Results

V.E.3.a. A [homogeneous area](#) is considered not to contain [ACM](#) only if the results of all samples submitted for analysis show [asbestos](#) in amounts of one percent or less.

V.E.3.b. 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 one percent.

V.E.4. The name and address of each laboratory performing an analysis submitted to the [asbestos](#) coordinator designated under subsection V.B. (General State Agency Responsibilities).

V.E.5. Air samples shall be analyzed according to the procedures described in paragraph III.U. (Maximum Allowable [Asbestos](#) Level).

V.F. ASSESSMENT

V.F.1. [Untitled]

V.F.1.a. For each inspection conducted under subsection V.D. (Exclusion) and previous inspections specified under subsection V.H. The state agency shall have a [certified](#) Inspector provide a written [assessment](#) of all [friable](#) material that is known or assumed [ACM](#) in a state building.

- V.F.1.b. Each [certified](#) Inspector providing a written [assessment](#) shall sign and date the assessment, provide his or her certification number, and submit a copy of the assessment to the [Asbestos](#) Coordinator designated under subsection V.B. (General State Agency Requirements).
- V.F.2. The Inspector shall classify and give reasons in the written [assessment](#) for classifying the [ACM](#) and suspected ACM assumed to be ACM in the state building into one of the following categories:
- V.F.2.a. [Damaged or significantly damaged thermal system insulation ACM.](#)
  - V.F.2.b. [Damaged friable surfacing ACM.](#)
  - V.F.2.c. [Significantly damaged friable surfacing ACM.](#)
  - V.F.2.d. [Damaged](#) or [significantly damaged friable miscellaneous ACM.](#)
  - V.F.2.e. [ACM](#) with [potential](#) for damage.
  - V.F.2.f. [ACM](#) with [potential](#) for significant damage.
  - V.F.2.g. Any remaining [friable ACM](#) or friable material suspected to be ACM.
  - V.F.2.h. Undamaged material known or suspected to be [ACM](#).
- V.F.3. [Assessment](#) shall include the following considerations:
- V.F.3.a.(i). Location and the amount of the material, both in total quantity and as a percentage of the [functional space](#).
  - V.F.3.a.(ii). Condition of the material, specifying:
  - V.F.3.a.(iii). Type of damage or significant damage (e.g., flaking, blistering, water damage, or other signs of physical damage).
  - V.F.3.a.(iv). Severity of damage (e.g., major flaking, severely torn jackets, as opposed to occasional flaking, minor tears to jackets).
  - V.F.3.a.(v). Extent or spread of damage over large areas or large percentages of the [homogeneous area](#).
- V.F.3.b. Whether the material is [accessible](#) by building occupants.
- V.F.3.c. The material's potential for disturbance.
- V.F.3.d. Known or suspected causes of damage or significant damage (e.g., [air erosion](#), vandalism, [vibration](#), water).

V.F.3.e. [Preventive measures](#), which might eliminate the reasonable likelihood of undamaged [ACM](#) from becoming significantly damaged.

V.F.3.f. The results of any [air monitoring](#).

V.F.4. The state agency shall select a [person certified](#) to develop management plans (see section II) to recommend, in writing to the state agency the appropriate [response actions](#). Prior to making a recommendation, such certified person shall review all inspections and [assessments](#), and may conduct any other activities necessary to support his or her recommendations. The certified person shall sign and date the recommendation, and provide his or her certification number, and submit a copy of the recommendations to the [asbestos](#) coordinator.

#### V.G. RECORDKEEPING

V.G.1. For each [response action](#) taken, the [Asbestos](#) Coordinator for each state agency shall document in a file to be maintained with building records:

V.G.1.a. 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 certification numbers; and if [ACM](#) is removed, the name and location of storage or disposal site of the ACM.

V.G.1.b. The name and signature of any [person](#) collecting any air samples required to be collected by subsection V.D. (Sampling), 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 accreditation requirements of clause III.D.1.a.(ii).

V.G.2. For each exclusion provided by subsection V.H. (Exclusions) below, a statement signed by a [certified](#) Inspector that meets the requirements of subsection V.H. (Exclusions) shall be included in the record.

#### V.H. EXCLUSIONS

V.H.1. A state agency shall not be required to perform an inspection under paragraph V.C.1. (Inspections) in any area of a state building where:

V.H.1.a. A [certified](#) Inspector has determined that, based on sampling records, [friable](#) or potentially [friable ACM](#) was identified in that homogeneous or [sampling area](#) during an inspection conducted before the effective date of this regulation. The Inspector shall sign and date a statement to that effect with his or her certification number and include such a statement as part of the record required by subsection V.G. (Recordkeeping). However, a certified

Inspector/management planner shall assess the friable [ACBM](#) under subsection V.F. and a certified [Air Monitoring Specialist](#) shall conduct [air monitoring](#), if not already completed.

- V.H.1.b. Based on sampling records and inspection records, a [certified](#) Inspector has determined that no [ACM](#) is present in the homogeneous or [sampling area](#) and the records show that the area was sampled, before the effective date of this regulation, in substantial compliance with section V.C.1. (Inspections), 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 free of ACM. The certified Inspector shall sign and date a statement, with his or her certification number that the homogeneous or sampling area determined not to be ACM was sampled in substantial compliance with section V.D.1. (Surfacing Materials).
- V.H.1.c. Based on inspection records a [certified](#) Inspector has determined that no [ACM](#) is present in the homogeneous or [sampling area](#) because [asbestos removal](#) operations have been conducted before the effective date of this regulation. The Inspector shall sign and date a statement to that effect and include his or her certification number. The state agency shall include the statement as part of the recordkeeping for that agency.
- V.H.1.d. An architect or project engineer responsible for the construction of a new state building built after the effective date of this regulation, or a [certified](#) Inspector signs a statement that no [ACM](#) was specified as a building material in any construction document for the building, or, to the best of his or her knowledge, no ACM was used as a building material in the building. The state agency shall place a copy of the signed statement in [asbestos](#) records for the agency.
- V.H.2. The exclusion, under subparagraph 1.a. through d. of this subsection, from conducting the inspection under paragraph V.C.1 (Inspections) shall apply only to homogeneous or [sampling areas](#) of a building that were inspected and sampled before the effective date of this regulation.

All underlined text in this regulation indicates defined terms.

**VI. USE OF ASBESTOS IN THE MANUFACTURING, COMMERCE AND CONSTRUCTION INDUSTRIES**

**VI.A. STANDARD FOR ASBESTOS MILLS**

Each owner or operator of an asbestos mill shall discharge no visible emissions to the ambient air from the asbestos mill and use the methods specified by paragraph III.J.1 (Air Cleaning and Negative Pressure Requirements) to clean emissions containing particulate asbestos material before they escape to, or are vented to, the ambient air.

**VI.B. STANDARD FOR ROADWAYS**

No owner or operator of a roadway may deposit asbestos tailings or asbestos-containing waste material on that roadway, unless it is a temporary roadway on an area of asbestos ore deposits.

**VI.C. STANDARD FOR MANUFACTURING**

VI.C.1. Applicability: This paragraph applies to the following manufacturing operations using commercial asbestos.

- VI.C.1.a. The manufacture of cloth, cord, wicks, tubing, tape, twine, rope, thread, yarn, roving, lap, or other textile materials.
- VI.C.1.b. The manufacture of cement products.
- VI.C.1.c. The manufacture of fireproofing and insulating materials.
- VI.C.1.d. The manufacture of friction products.
- VI.C.1.e. The manufacture of paper, millboard, and felt.
- VI.C.1.f. The manufacture of floor tile.
- VI.C.1.g. The manufacture of paints, coatings, caulks, adhesives, and sealants.
- VI.C.1.h. The manufacture of plastics and rubber materials.
- VI.C.1.i. The manufacture of chlorine utilizing asbestos diaphragm technology.
- VI.C.1.j. The manufacture of shotgun shell wads.
- VI.C.1.k. The manufacture of asphalt concrete.

VI.C.2. Standard: Each owner or operator of any of the manufacturing operations to which this paragraph 3. (Standards for Manufacturing) applies shall:

- VI.C.2.a. Discharge no [visible emissions](#) to the ambient air from these operations or from any building or structure in which they are conducted; and
- VI.C.2.b. Use the methods specified in paragraph III.J.1. (Air Cleaning and Negative Pressure Requirements) to clean emissions from these operations containing [particulate asbestos material](#) before they escape to, or are vented to, the ambient air.

#### VI.D. STANDARD FOR SPRAYING

The owner or operator of an operation in which [asbestos-containing materials](#) are spray applied shall comply with the following requirements:

- VI.D.1. Use materials that contain one percent [asbestos](#) or less on a dry weight basis for spray-on application on buildings, structures, pipes, and conduits, except as provided in paragraph b. below, and:
    - VI.D.1.a. Notify the [Division](#) at least 20 days before beginning the spraying operation. Include the following information in the notice:
      - (A) Name and address of owner or operator.
      - (B) Location of spraying operation.
      - (C) Procedures to be followed to meet the requirements of paragraph VI.D (Standard for Spraying).
    - VI.D.1.b. Discharge no [visible emissions](#) to the ambient air from the spray-on application of the [asbestos-containing material](#) and/or use the methods specified by paragraph III.J.1. (Air Cleaning and Negative Pressure Requirements) to clean emissions containing [particulate asbestos material](#) before they escape to, or are vented to, the ambient air.
  - VI.D.2. The requirements of subparagraph a. above do not apply to the spray-on application of materials where the [asbestos](#) fibers in the materials are encapsulated with a bituminous or resinous binder during spraying and the materials are not [friable](#) after drying.
- #### VI.E. STANDARD FOR FABRICATING
- VI.E.1. Applicability. This paragraph applies to the following [fabricating](#) operations using [commercial asbestos](#):
    - VI.E.1.a. The fabrication of cement building products.
    - VI.E.1.b. The fabrication of friction products, except those operations that primarily install [asbestos](#) friction materials on motor vehicles.

VI.E.1.c. The fabrication of cement or silicate board for ventilation hoods; ovens; electrical panels; laboratory furniture; bulkheads, partitions, and ceilings for marine construction; and flow control devices for the molten metal industry.

VI.E.2. Standard. Each owner or operator of any of the [fabricating](#) operations to which this paragraph 5. (Standard for Fabricating) applies shall:

VI.E.2.a. Discharge no [visible emissions](#) to the ambient air from any of the operations or from any building or structure in which they are conducted; and

VI.E.2.b. Use the methods specified by paragraph III.J.1. (Air Cleaning and Negative Pressure Requirements) to clean emissions containing [particulate asbestos material](#) before they escape to, or are vented to, the ambient air.

#### VI.F. STANDARD FOR INSULATING MATERIALS

No owner or operator of a [facility](#) may install or reinstall on a [facility component](#) any insulating materials that contain [commercial asbestos](#) if the materials are either molded and friable or wet-applied and friable after drying. The provisions of this subsection do not apply to spray-applied insulating materials regulated under subsection VI.D. (Standard for Spraying).

All underlined text in this regulation indicates defined term.

## **VII. STATEMENT OF BASIS AND PURPOSE**

### **VII.A. AMENDMENT TO SECTION II – INCORPORATION OF THE EPA MODEL ACCREDITATION PLAN BY REFERENCE (March 21, 1996)**

#### Background

The Asbestos Hazard Emergency Response Act of 1986 (AHERA) (15 U.S.C. 2646) was enacted to identify, manage and reduce exposure to asbestos in schools. The Asbestos School Hazard Abatement Reauthorization Act of 1990 (ASHARA) (Public Law 101-637) extended the training and certification requirements of AHERA to public and commercial buildings. Both acts require the Environmental Protection Agency (EPA) to promulgate minimum standards for the conduct of this training. In addition, states are mandated by both acts to either adopt EPA's Model Accreditation Plan (MAP), as presented in 40 CFR Part 763, or create programs that are at least as stringent as the EPA MAP. The state act contemplates adoption of the pertinent federal training requirements in 25-7-503 (1)(f)(I). Through this rulemaking, the Commission is incorporating by reference the Model Accreditation Plan into Air Quality Control Commission Regulation Number 8, Part B, section II to comply with federal and state laws.

#### Specific Authority

The specific authority for this regulation is found in the Colorado Air Quality Control Act. Section 25-7-503 (1)(f)(I) provides authority to promulgate regulations regarding the training required to apply for state asbestos certification. This regulation will establish appropriate minimum training standards that will meet both state and federal mandates.

#### Purpose

Regulation 8 generally provides protection to Colorado citizens from exposure to asbestos, a Class A carcinogen, caused by improper abatements due to inadequate training of asbestos Workers, Supervisors, Inspectors, management planners and project designers. This rule will protect against potentially adverse economic impacts that might result against course providers in Colorado. This rule also helps protect against adverse health and environmental effects that may be caused by improperly trained asbestos Workers. In addition, this rule will meet the requirements of federal law (AHERA) and state law (Colorado Air Quality Control Act).

### **VII.B. REVISIONS RESULTING FROM HB 95-1016 (September 19, 1996)**

#### Basis

The Commission adopted revisions to Regulation No. 8, Part B, recommended by the Division to comply with state legislative directives, and to make other revisions reflecting changes in the federal program and appropriate changes to make the state program more effective and clear. A variety of recommended revisions were appropriate given that Regulation No. 8 has not been reopened and revised for over three years, apart from a recent limited revision regarding the EPA Model Accreditation Plan, and it was necessary to bring the regulation up to date.

The state [asbestos](#) program is not part of the State Implementation Plan (SIP), and the revisions approved by the [Commission](#) today will not be submitted to [EPA](#) as part of Colorado's SIP.

### Specific Statutory Authority

Specific authority exists for the [Commission](#)'s revisions in § 25-7-105(10), and § 25-7-501 et seq., C.R.S. In 1995 the Colorado legislature enacted HB 95-1016 amending Part 5, Asbestos Control, to require a variety of changes to the program. Section 25-7-503 provides the Commission with many separate specific authorities including, for example, specifying abatement practices and procedures, assessing notification fees, prescribing inspection and monitoring requirements, enforcing the maximum allowable [asbestos](#) level of 0.01 fibers per cubic centimeter, and requiring training and examinations. Other sections in Part 5 provide authority for specific requirements related, for example, to certification of personnel involved in [asbestos abatement](#). Each of the revisions adopted by the Commission today are supported by specific authority within Part 5.

### Purpose

The [Commission](#) revises Regulation No. 8, Part B, regarding [asbestos](#) regulation to effectuate recent state legislative directives, to ensure the public is protected by minimizing the release of asbestos, to address changes to the federal National Emissions Standard for Hazardous Air Pollutants ([NESHAP](#)) Subpart M regarding asbestos, and to update the regulation for efficiency and clarity. The Commission adopts the substantive changes recommended by the [Division](#) and relies upon the record to support those changes. The Commission adopts the Division's proposals to eliminate unnecessary administrative text where it has been found in the regulation. Also, the Commission adopts various incorporations by reference recommended by the Division to bring Regulation No. 8, Part B, into conformity with the Colorado APA.

The [Commission](#) raises the minimum scope of [asbestos abatement](#) subject to the program as recommended by the [Division](#) to conform with the [NESHAP](#) for [asbestos](#) and as directed in § 25-7-503(1)(b), C.R.S. The Commission acknowledges certain statutory changes that are prescriptive from HB 95-1016, e.g., the effect of a plea of nolo contendere (§ 25-7-508(2)(a)(II)(C), C.R.S.), and prohibition from seeking recertification within one year after the Division revokes certification for a violation of the regulation (§ 25-7-508(6), C.R.S.). The Commission approves the Division devising application procedures to offer certificates for a one, three or five year period at the option of the applicant (§§ 25-7-506(2), -507.5(2)(b), C.R.S.).

The [Commission](#) has considered the record and adopts the [Division](#)'s proposals regarding the project manager discipline and [project design](#) requirements. The Commission believes the project manager duties are reasonable and appropriate, and determines at this time that imposing a college-level or higher education requirement would unnecessarily preclude otherwise qualified [persons](#) from performing these duties and that education at such a level was not required by the legislature (§§ 25-7-502(7.5), -503(1)(b)(V)). The Commission approves of the independence requirement for project managers from [GACs](#), and the separate independence requirement for Inspectors from GACs as reasonable and required by statute (§ 25-7-503(1)(b)(V), C.R.S.).

The [Commission](#) adopts the additional training and updated work practices appendix for the [removal](#) of sheet vinyl containing [asbestos](#) based on the record. The Commission believes this is generally consistent with EPA's [NESHAP](#) and with §§ 25-7-501 and -503(1)(a), C.R.S. by reducing the risk of the release of [asbestos](#) fibers. Further, the Commission approves revisions to the definitions of [asbestos-containing waste material](#), [facility](#), [cutting](#), and [grinding](#) as consistent with EPA's NESHAP. The Commission approves the disclosure regarding certification of Workers conducting abatement in [single-family residential dwellings](#) as required by § 25-7-504(3), C.R.S., to ensure that those doing the work are properly [certified](#) and therefore properly trained. The Commission also adopts revisions to procedures for use of [glove bags](#) on abatement projects as being reasonable and efficient, and providing practical assistance to those conducting abatements while protecting the public from exposure to asbestos.

Based upon documents submitted and considered pursuant to § 25-7-110.5, C.R.S., the [Commission](#) makes the following findings: (1) the Commission has considered and has based its decision upon the reasonably available, validated, reviewed and sound scientific methodologies and information made available by interested parties; (2) where these revisions are not administrative in nature, the record supports that the revisions will result in a demonstrable reduction in [asbestos](#) fiber releases or prevent asbestos releases where they might otherwise occur; (3) the revisions selected are the most cost-effective based upon the documents submitted pursuant to § 25-7-110.5(4), C.R.S., they provide the regulated community with flexibility, and achieve necessary reductions or prevention of the release of asbestos, and; (4) the revisions selected will maximize the air quality benefits of asbestos regulation in the most cost-effective manner.

VII.C. REVISIONS RESULTING FROM SB-01-121, THE DORA ASBESTOS CONTROL PROGRAM 2000 SUNSET REVIEW, AND THE REORGANIZATION OF REGULATION NO. 8, PART B (January 16, 2003)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4) and (12.5), C.R.S. for new and revised regulations.

Basis

Regulation No. 8, Part B, sets forth the [Air Quality Control Commission's asbestos](#) control program. The statutory authority for this program is contained in the Colorado Air Pollution Prevention and Control Act ("Act"). In 2001, the legislature amended Part 5 of the Act dealing with asbestos control. These amendments, among other things, expanded the definition of [Area of Public Access](#) to include [single-family residential dwellings](#), mandated certification for [Air Monitoring Specialists](#) and changed the definition of [Friable Asbestos-Containing Material](#). As part of the legislative review of the Act, the Department of Regulatory Agencies ("DORA") examined potential problems with the Act and Regulation No. 8, Part B. Based on this review, DORA issued a report recommending a regulatory solution to perceived inequities in the Conflict of Interest provision set forth in Regulation No. 8, Part B, Section III.C.6.b.v. These revisions are needed to effect the statutory amendments and resolve the conflict of interest issue identified in the DORA report. In addition, the Regulation has been reorganized to make it more readable and easier to understand.

## Specific Statutory Authority

The specific statutory authority for these revisions is set forth in various sections of the Colorado Air Pollution Prevention and Control Act. Section, 25-7-105(1), C.R.S., gives the [Air Quality Control Commission](#) general authority to promulgate rules and regulations necessary for the proper implementation of the Act. Additionally, the various provisions set forth in Part 5 of the Act give the Commission specific authority to promulgate regulations governing [asbestos abatement](#) and control. The provisions set forth in Sections 25-7-502 and 25-7-503, C.R.S. authorize the regulatory revisions governing [asbestos](#) control in [single-family residential dwellings](#), changes to the conflict of interest regulations and modification of the regulatory definition of [friable asbestos-containing material](#). Additional authority regarding single-family residential dwellings is set forth in Section 25-7-504, C.R.S. The revisions governing the certification of [Air Monitoring Specialists](#) are specifically authorized pursuant to Section 25-7-506.5, C.R.S.

## Purpose

The purposes of these revisions are as follows: 1) to effectuate the legislative changes to the state's [asbestos](#) control program adopted through the passage of Senate Bill 01-121; 2) to address inequalities that DORA noted with respect to the conflict of interest provisions; and 3) to reorganize the Regulation to make it more readable and easier to understand.

### VII.C.1. Senate Bill 01-121

In enacting Senate Bill 01-121, the Legislature made the following changes to Colorado's [asbestos](#) control program: 1) revisions to expand statutory and regulatory requirements to [single-family residential dwellings](#); 2) modification of the definition of [friable asbestos-containing material](#) to clarify that this term includes materials measured by area or volume as well as by weight; and 3) adoption of a certification requirement for persons conducting [Air Monitoring Specialist](#) activities. To accomplish these legislative changes the [Commission](#) has adopted a number of revisions to Regulation No. 8, Part B.

#### VII.C.1.a. Single Family Residential Dwellings

Prior to the adoption of Senate Bill 01-121, [single-family residential dwellings](#) were not included within the definition of [area of public access](#). Because the majority of requirements set forth in the Act and the Regulation apply only to areas of public access, this exclusion left homeowners without recourse to important regulatory protections in connection with either the abatement of [asbestos](#) or renovations impacting asbestos in their homes. To rectify this situation, the Legislature modified the statutory definition of area of public access to include single-family residential dwellings, but provided that such a dwelling would not be considered an area of public access at the request of the homeowner residing in that dwelling. The Commission has adopted essentially identical modifications to the regulatory definition. Modifications to the regulatory provisions governing permitting and use of [certified](#) personnel have also been made to provide that while single-family residential dwellings could constitute areas of public access, neither permits nor the use of certified abatement Workers was required for abatement projects in

such dwellings where the abatement was performed by an individual utilizing the dwelling as his or her primary residence. These provisions are consistent with the statutory mandate set forth in Senate Bill 01-121. Finally, the revisions create a new minimum scope of applicability with regard to single-family residential dwellings. Consistent with the authority set forth in Senate Bill 01-121 the Commission has set applicability levels for abatement projects in single-family residential dwellings at 50 linear feet on pipes or 32 square feet on other surfaces. These [levels](#) are lower than the levels currently set for projects in [public and commercial buildings](#). The lower levels have been adopted in view of the fact that residential projects are typically much smaller; nonetheless, they are likely to result in prolonged exposure to higher risk populations, such as small children, the elderly or the infirm, than projects in public or commercial buildings.

#### VII.C.1.b. Definition of Friable Asbestos-Containing Material

The previous definition of the term "[friable asbestos-containing material](#)" referenced material containing more than one percent [asbestos](#) by weight. Authorized laboratory analytical methods, however, have, in addition to weight, utilized measurements by area or volume. Consistent with these methods, and the change to the statutory definition, the new regulatory definition clarifies that friable asbestos-containing material includes material containing more than one percent asbestos by area or volume, as well as weight.

#### VII.C.1.c. Certification of Air Monitoring Specialists

[Air Monitoring Specialists](#) perform air sampling during and at the end of [asbestos abatement](#) projects as well as conduct final visual inspections to ensure that visible dust or debris is not left at the conclusion of the project. These activities are crucial to protecting the general public from [asbestos](#) exposure resulting from abatement projects. Despite the important role that they play in protecting the public, Air Monitoring Specialists were not previously required to obtain a state certification. This omission undermined the Division's ability to ensure that Air Monitoring Specialists were properly qualified, and precluded the Division from revoking certifications of unqualified individuals. In recognition of this, Senate Bill 01-121 required certification of Air Monitoring Specialists in accordance with [Commission](#) regulations setting forth experience, education and training requirements.

These revisions adopt requirements necessary to effectuate the certification of [Air Monitoring Specialists](#). The new requirements allow currently practicing Air Monitoring Specialists to obtain certification upon successful completion of an Air Monitoring Specialist refresher course and a Division administered exam. Individuals who are not qualified under the present regulation, must have a high school diploma and pass a Division approved exam, as well as complete an Air Monitoring Specialist course and on-the-job experience consisting of at least 80 hours of [air monitoring](#) under the supervision of an existing AMS and at least two final visual clearances and at least two final air clearances under the observation of an existing AMS. While an existing [AMS](#) must sign off on a trainee's completion of the on-the-job experience, such a sign off shall not subject the AMS to any enforcement action or liability based on the trainee's subsequent performance of AMS activities.

#### VII.C.2. DORA Recommendation

In connection with its review of Regulation No. 8, Part B, the Department of Regulatory Agencies recommended revisions to the provision governing potential conflicts of interest with respect to inspections for [asbestos](#). The new regulation requires that inspection and abatement firms be [independent](#) of each other but removes the prohibition against payments from abatement contractors to Inspectors. This change puts abatement and inspection firms on equal footing with respect to contracting with building owners, while giving owners the flexibility to contract with a single firm and allow that firm to sub-contract the abatement or inspection work with another firm.

### VII.C.3. Reorganization

The regulation has been reorganized to make it more readable and easier to understand. This reorganization has not substantively changed any requirements, but rather has put these requirements into a more accessible format.

Section I.A. of the Regulation governing materials incorporated by reference, has been expanded to include not only a statement that certain materials have been incorporated by reference, but also a list of those materials. This change makes the substantive provisions citing these materials easier to read and allows the reader to know up front what additional rules, beyond the regulation itself, apply to [asbestos](#) control in Colorado.

The definition section has been changed to include a list of relevant acronyms. This allows the reader to quickly identify what a given acronym stands for. Additionally, throughout the reorganized regulation, electronic links have been created so that individuals electronically reviewing a particular provision can immediately link to a given definition or acronym used in that provision.

Section II of the rule, governing certifications, has been substantially re-written to systematically explain the steps necessary to obtain certification in each of the certified disciplines. The current regulation organizes this information by the different types of requirements rather than by discipline. For example, testing requirements for all the disciplines are contained in one subsection, while training requirements are contained in another. The proposed reorganization organizes this material by discipline. As such, a person seeking to become certified as a Building Inspector can turn directly to the Building Inspector section, and not have to flip back and forth between several subsections. In addition, the current rule includes provisions governing when use of certified personnel is required. Because these provisions substantively govern asbestos control, and do not address how certification is to be obtained, they have been moved to a new subsection in Section III governing abatement, renovation and demolition projects.

The substantive requirements in Section III have been reorganized to follow, as nearly as possible, the chronological steps that need to be taken in dealing with [asbestos-containing materials](#) in buildings. Given the complexity of the regulation, perfect sequencing was not possible, since certain requirements may be applicable at various stages, but generally the proposed revisions logically group related requirements together and in an order that should make sense to a layperson trying to determine how to properly proceed with respect to [asbestos](#)

control. In addition, statements have been added to clarify when the various requirements are applicable.

Because certain specialized rules apply to [asbestos](#) in [schools](#) and [state buildings](#), separate sections containing these rules have been maintained in the regulation. A new Section VI has been created governing standards associated with the manufacture and construction of asbestos materials. These requirements are currently placed in Section III governing project requirements. Because these rules are separate and distinct from the rules governing the removal and management of asbestos in buildings, the Division believes that they should be contained in a separate section. Finally, the section governing enforcement has been deleted from the proposed reorganization. This section unnecessarily duplicated the provisions of the Act, and its inclusion in the regulation was inconsistent with the other air regulations that rely on the Act for their enforcement mechanisms.

#### Findings Pursuant to § 25-7-110.8, C.R.S.

These revisions are based on reasonably available, validated and reviewed, and sound scientific methodologies demonstrating that exposure to asbestos creates a public health hazard. Interested parties did not provide the Commission with any other validated, reviewed and scientifically sound methodologies or information.

Based on the evidence presented on the record, the requirements of this revised regulation will reduce public exposure to harmful asbestos fibers and therefore reduce the risks to human health and the environment thereby justifying the costs associated with this regulation.

The revisions represent the regulatory alternative presented to the Commission, which best balances cost-effectiveness, flexibility to the regulated community and maximization of air quality benefits.

#### VII.D. REVISIONS TO ADDRESS INCORRECT LANGUAGE IN THE SINGLE-FAMILY RESIDENTIAL DWELLING OPT-OUT PROVISION, ROOFING MATERIALS AND TYPOGRAPHICAL ERRORS (December 18, 2003)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4) and (12.5), C.R.S. for new and revised regulations.

#### Basis

Regulation No. 8, Part B, sets forth the Air Quality Control Commission's [asbestos](#) control program. The statutory authority for this program is contained in the Colorado Air Pollution Prevention and Control Act ("Act"). The Legislative Legal Services contacted the [Division](#) to identify a concern with the [single family residential dwelling](#) opt-out provision. Specifically, Legislative Legal Services indicated that the regulatory language governing single-family residential opt outs conflicted with the overriding statutory language. While the intent of the old provision was to be consistent with the statutory directive, the old regulatory language failed to

capture that intent. These revisions are needed to address the concerns of Legislative Legal Services. We have also fixed several typographical errors.

### Specific Statutory Authority

The specific statutory authority for these revisions is set forth in various sections of the Colorado Air Pollution Prevention and Control Act. Section, 25-7-105(1), C.R.S., gives the Air Quality Control Commission general authority to promulgate rules and regulations necessary for the proper implementation of the Act. Additionally, the various provisions set forth in Part 5 of the Act give the Commission specific authority to promulgate regulations governing [asbestos abatement](#) and control. The provisions set forth in Sections 25-7-502 and 25-7-503, C.R.S. authorize the regulatory revisions governing asbestos control in [single-family residential dwellings](#), changes to the conflict of interest regulations and modification of the regulatory definition of friable asbestos-containing material. Additional authority regarding single-family residential dwellings is set forth in Section 25-7-504, C.R.S.

### Purpose

These changes address issues identified by Legislative Legal Services with respect to the single-family residential dwelling opt-out provision and address typographical errors.

### Findings Pursuant to § 25-7-110.8, C.R.S.

These revisions are based on reasonably available, validated and reviewed, and sound scientific methodologies demonstrating that exposure to asbestos creates a public health hazard. Interested parties did not provide the Commission with any other validated, reviewed and scientifically sound methodologies or information.

Based on the evidence presented on the record, the requirements of this revised regulation will reduce public exposure to harmful asbestos fibers and therefore reduce the risks to human health and the environment thereby justifying the costs associated with this regulation.

The revisions represent the regulatory alternative presented to the Commission, which best balances cost-effectiveness, flexibility to the regulated community and maximization of air quality benefits.

### VII.E. REVISIONS TO ADDRESS LANGUAGE IN THE SINGLE-FAMILY RESIDENTIAL DWELLING OPT-OUT PROVISION (December 16, 2004)

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4) and (12.5), C.R.S. for new and revised regulations.

## Basis

Regulation No. 8, Part B, sets forth the Air Quality Control Commission's asbestos control program. The statutory authority for this program is contained in the Colorado Air Pollution Prevention and Control Act ("Act"). The Legislative Legal Services contacted the Division to identify a concern with the [single family residential dwelling](#) opt-out provision. Specifically, Legislative Legal Services indicated that the regulatory language governing single-family residential opt-outs exceeded statutory language. While the intent of the current provision was thought to be consistent with the statutory directive, Legislative Legal Services disagreed. Therefore, this revision is needed to address the concern of Legislative Legal Services.

## Specific Statutory Authority

The specific statutory authority for these revisions is set forth in various sections of the Colorado Air Pollution Prevention and Control Act. Section, 25-7-105(1), C.R.S., gives the Air Quality Control Commission general authority to promulgate rules and regulations necessary for the proper implementation of the Act. Additionally, the various provisions set forth in Part 5 of the Act give the Commission specific authority to promulgate regulations governing asbestos abatement and control. The provision set forth in Section 25-7-502, C.R.S. authorizes the regulatory revisions governing asbestos control in single-family residential dwellings. Additional authority regarding single-family residential dwellings is set forth in Section 25-7-504, C.R.S.

## Purpose

This changes addresses the issue identified by Legislative Legal Services with respect to the single-family residential dwelling opt-out provision.

## VII.F. REVISIONS TO REGULATION NUMBER 8, PART B (June 21, 2007)

This Statement of Basis, Specific Statutory Authority and Purpose comply with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4) and (12.5), C.R.S. for new and revised regulations.

### **Basis**

Regulation No. 8, Part B, sets forth the Air Quality Control Commission's asbestos control program. The statutory authority for this program is contained in the Colorado Air Pollution Prevention and Control Act ("Act"). In 2006, the Legislature amended Part 5 of the Act dealing with asbestos control. These amendments, among other things: extended the sunset period to July 1, 2013; mandated exams for Air Monitoring Specialists; allowed the Division to establish certification renewal cycles, and the need to retest, administratively; changed an incorrect Code of Federal Regulations reference; and applied the regulation consistently across all building types. This included requiring an Air Monitoring Specialist to be independent of the General Abatement Contractor. It also included requiring a Project Manager on abatement projects of specified amounts of friable asbestos-containing materials in all building types. In addition, the Regulation has been changed to fix several administrative, typographical and referencing errors.

### **Specific Statutory Authority**

The specific statutory authority for these revisions is set forth in various sections of the Colorado Air Pollution Prevention and Control Act. Section, 25-7-105(1), C.R.S., gives the Air Quality Control Commission general authority to promulgate rules and regulations necessary for the proper implementation of the Act. Additionally, the various provisions set forth in Part 5 of the Act give the Commission specific authority to promulgate regulations governing asbestos abatement and control. The provisions set forth in Sections 25-7-505.5, C.R.S. authorize the regulatory revision to allow proficiency testing of Air Monitoring Specialists. Section 25-7-503, C.R.S., authorizes changes to the regulation for consistency and revises an incorrect Code of Federal Regulations reference. Additionally, authority to allow the Division to change certification periods is set forth in Sections 25-7-506, 25-7-506.5 and 25-7-507.5, C.R.S.

### **Purpose**

The purposes of these revisions are as follows: 1) to effectuate the legislative changes to the State's asbestos control program adopted through the passage of House Bill 06-1177, and 2) to fix several administrative, typographical and referencing errors.

### **House Bill 06-1177**

In enacting House Bill 06-1177, the Legislature made the following changes to Colorado's asbestos control program: 1) addition of a examination requirement for persons conducting Air Monitoring Specialist activities; 2) corrected an incorrect Code of Federal Regulation reference; 3) required an Air Monitoring Specialist to be independent of the General Abatement Contractor; and 4) required a Project Manager on abatement projects (over a specified minimum amount of

friable asbestos-containing materials) in all building types. To accomplish these legislative changes the Commission has adopted a number of revisions to Regulation No. 8, Part B.

### **1.Examinations for Air Monitoring Specialists**

Air Monitoring Specialists perform air sampling during, and at the conclusion of, asbestos abatement projects. They also conduct final visual inspections to ensure that visible dust or debris is not left behind at the conclusion of the project. These activities are crucial to protecting the general public from asbestos exposure resulting from abatement projects. Several years ago, Legislative Legal Services determined that the Division did not have the specific statutory authority to administer tests to Air Monitoring Specialist applicants. This determination removed the Division's ability to ensure that Air Monitoring Specialists were properly trained and competent to perform their duties. In recognition of this, House Bill 06-1177 revised the statutory language to make it clearer that an examination was required in order for them to become certified.

### **2.Statutorily Established Certification Periods**

Currently, it is a requirement that certified individuals take an annual refresher class and pass a state certification test for each discipline. Those who have renewed their certification for many years have often asked for relief from the annual testing requirement. It was recommended that the Division track pass/fail rates and other factors for a period of time to determine appropriate renewal cycles based on these rates.

### **3. Correct Code of Federal Regulations Provisions**

In Section III.U.3.a. (Maximum Allowable Asbestos Level – Second Set by TEM) of the Regulation, a reference to a provision in the Code of Federal Regulations (CFR) is made that is no longer correct due to changes within that document. This provision must be changed in order to be consistent with the current CFR.

### **4. Consistency in Requirements of the Regulation**

In connection with its review of Regulation No. 8, Part B, DORA recommended extending the provision governing potential conflicts of interest with respect to Air Monitoring Specialists and General Abatement Contractors. Additionally, the legislature adopted the use of Project Managers on qualifying abatement projects of friable asbestos containing material in all types of buildings. School buildings and single-family residential dwellings were not covered by this requirement. As abatement projects in these types of buildings may be just as complex as projects in public and commercial buildings, the legislature made the requirements apply to all buildings.

## **B. Corrections**

A number of administrative, typographical and referencing errors were corrected. These corrections have not changed any requirements, but were necessary to correct errors that were present.

### **Findings Pursuant to § 25-7-110.8, C.R.S.**

These revisions are based on reasonably available, validated and reviewed, and sound scientific methodologies demonstrating that exposure to asbestos creates a public health hazard. Based on the evidence presented on the record, the requirements of this revised regulation will reduce public exposure to harmful asbestos fibers and therefore reduce the risks to human health and the environment thereby justifying any costs associated with this regulation. The revisions represent the regulatory alternative presented to the Commission, which best balances cost-effectiveness, flexibility to the regulated community and maximization of air quality benefits.

#### **VII.G. Revisions to Regulation Number 8, Part B (December 20 & 21, 2007)**

This Statement of Basis, Specific Statutory Authority and Purpose complies with the requirements of the Colorado Administrative Procedure Act Sections 24-4-103(4), C.R.S. for new and revised regulations.

##### **Basis**

The Air Quality Control Commission has adopted revisions to Regulation No. 8, Part B, Sections I.B.13., I.B.14., I.B.15., (all other definition numbers will be updated to reflect these 3 additions), II.B.1., II.B.2., II.C.2., II.C.4., II.C.6., II.D.2., II.D.3.b.(iv)., II.E.1., II.E.1.a., II.G.1., II.G.2., II.L., II.M., II.N., III.E.1.b., III.E.1.c., III.E.1.d., III.F., III.G.1.b., III.G.1.c., III.G.3.c. and III.G.6., in order to raise current fees for certification of individuals and asbestos abatement firms and fees for asbestos abatement and demolition notices and permits. New fees are proposed for registration of asbestos training providers, asbestos consulting firms and asbestos laboratories. The fees will be adjusted commencing in 2008. The increases are necessary to cover current and rising program costs.

##### **Specific Statutory Authority**

The specific statutory authority for these revisions is set forth in Section 25-7-510 C.R.S., which allows the Commission to adjust fees so that the revenue generated is sufficient to cover direct and indirect costs to implement the Asbestos program.

##### **Purpose**

The revisions to Regulation No.8, Part B, Sections I.B.13., I.B.14., I.B.15., (all other definition numbers will be updated to reflect these 3 additions), II.B.1., II.B.2., II.C.2., II.C.4., II.C.6., II.D.2., II.D.3.b.(iv)., II.E.1., II.E.1.a., II.G.1., II.G.2., II.L., II.M., II.N., III.E.1.b., III.E.1.c., III.E.1.d., III.F., III.G.1.b., III.G.1.c., III.G.3.c. and III.G.6. will cover existing and anticipated shortfalls.

## APPENDIX A

All [underlined text](#) in this regulation indicates defined terms.

This section is non-mandatory. It was designed to provide guidance to contractors in conducting [asbestos abatement](#) in a safe fashion.

### A. SMALL SCALE PROJECTS

- A.1. If [friable asbestos-containing materials](#), in any amount less than or equal to the [trigger levels](#), will be abated, all of paragraph A.4. below should be followed.
- A.2. Nothing in this Appendix A shall prevent an owner or operator from employing the work practices contained in section III (Abatement, Renovation and Demolition Projects) if it is more prudent or practical to do so.
- A.3. For the purposes of this Appendix A, small scale, short-duration [renovation](#) and maintenance activities include but are not limited to:
  - A.3.a. [removal](#) of [asbestos-containing](#) insulation on pipes;
  - A.3.b. [removal](#) of small quantities of [asbestos-containing](#) insulation on beams or above ceilings;
  - A.3.c. replacement of an [asbestos-containing](#) gasket on a valve;
  - A.3.d. installation or [removal](#) of a small section of drywall;
  - A.3.e. installation of electrical conduits through or proximate to [asbestos-containing materials](#).
- A.4. The following controls and work practices may be used to reduce [asbestos](#) exposures during small maintenance and [renovation](#) operations:
  - A.4.a. All [movable objects](#) should be removed from the [work area](#) to protect them from [asbestos](#) contamination. Objects that cannot be removed should be covered completely with six (6) mil polyethylene plastic sheeting before work begins. If contamination has already occurred, they should be thoroughly cleaned with a [HEPA vacuum](#) or wet wiped before they are removed from the work area, or completely encased in plastic.

A.4.b. Wet methods

Whenever feasible, wet methods, such as those described in subparagraph III.O.1.a.(i). (Wetting) should be used during small scale, short-duration maintenance and [renovation](#) projects.

A.4.c. [Removal](#) methods

A.4.c.(i). Use of [glovebags](#) should be in accordance with subparagraph III.V.1. (Glovebags).

A.4.c.(ii). If a [facility component](#) is to be removed from a structure in order that abatement be performed at an alternate location, the facility component should be completely wrapped in polyethylene and removed to an area where the [stripping](#) can be done safely.

A.4.d. Containment Barriers

A.4.d.(i). Containment Barriers may be constructed in accordance with subparagraph III.N. (Containment Components);

A.4.d.(ii). Mini containment barriers may be constructed in the following manner:

A.4.d.(ii).(A). Affix polyethylene sheeting to the walls with spray adhesive and tape;

A.4.d.(ii).(B). Cover the floor with polyethylene and seal it to the polyethylene covering the walls;

A.4.d.(ii).(C). Seal any penetrations such as pipes or electrical conduits with tape; and

A.4.d.(ii).(D). Construct a small change room (approximately 3 feet square) made of 6 mil polyethylene supported by 2 inch by 4 inch lumber (the polyethylene should be attached to the lumber supports with staples or spray adhesive and tape).

A.4.d.(ii).(E). The change room should be contiguous to the [work area](#) and is necessary to allow the Worker to vacuum off his protective coveralls and remove them before leaving the work area.

A.4.d.(ii).(F). While inside the [work area](#), the Worker should wear Tyvek<sup>®</sup> disposable coveralls, in accordance with subparagraph III.K.2.b.

A.4.d.(ii).(G). Either a [HEPA vacuum](#) or a negative air [HEPA](#) unit should be used to establish negative air within the [enclosure](#), in accordance with subparagraph III.N. (Containment Components).

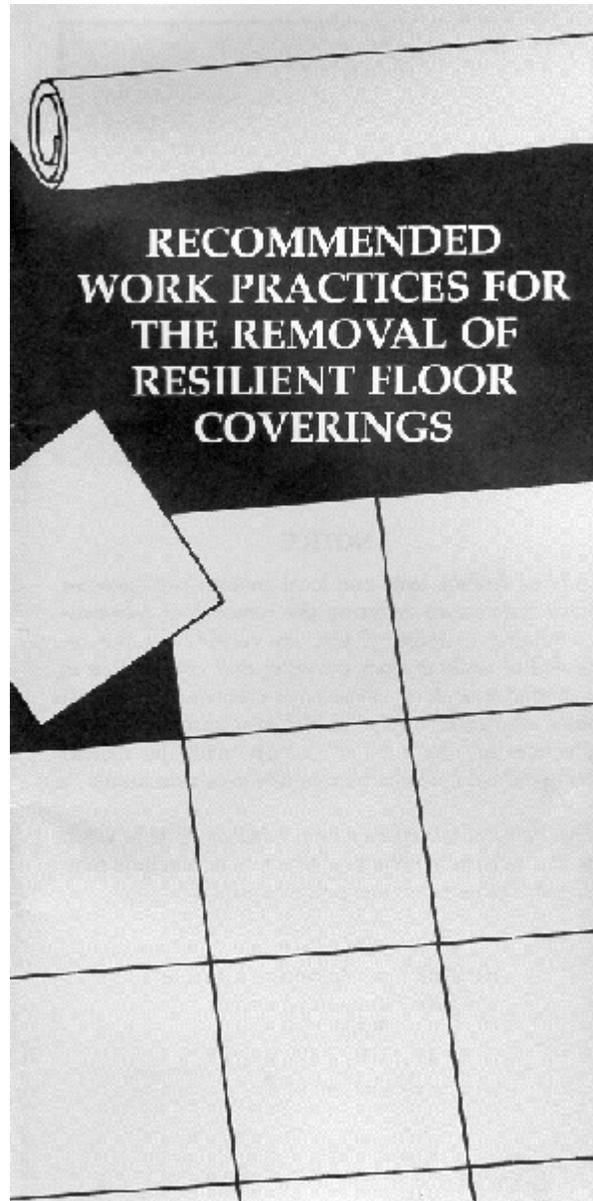
A.4.e. Clearance Air Monitoring

All requirements of subsection III.P. (Clearing Abatement Projects) are optional, except that if [air monitoring](#) is performed, and the area has public access, the maximum allowable [asbestos](#) level shall not be exceeded.

APPENDIX B

Brochure

“Recommended Work Practices for the Removal of Resilient Floor Coverings”





Do not sand, dry sweep, dry scrape, drill, saw, beadblast, or mechanically chip or pulverize existing resilient flooring, backing, lining felt or asphaltic “cut-back” adhesives.

These products may contain either *asbestos fibers* or *crystalline silica*.

Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard.

Smoking by individuals exposed to asbestos greatly increases the risk of serious bodily harm.

Unless positively certain that the product is a non-asbestos containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content.

The RFCI’s *Recommended Work Practices for Removal of Resilient Floor Coverings* are a defined set of instructions which should be followed if you must remove existing resilient floor covering structures.

**NOTICE**

Various federal, state and local government agencies have regulations covering the removal of asbestos-containing material. If you are considering the removal of resilient floor covering that contains, or is presumed to contain, asbestos you should review and comply with the appropriate regulations.

This publication replaces prior editions of these work practices. Future editions of these work practices may be issued to replace this publication.

*Issued by*  
Resilient Floor Covering Institute  
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Rockville, MD 20850  
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**RECOMMENDED WORK PRACTICES FOR THE REMOVAL OF RESILIENT FLOOR COVERINGS**

**CONTENTS**

Introduction .....2  
 Recommended Work Practices .....5  
 Preparation of Floors .....5  
 General Information .....5  
 Sheet Vinyl Flooring .....6  
     General Information and Preparation .....6  
     Special Precautions .....7  
     Complete Removal, Peripheral .....8  
     Complete Removal, Unadhered .....11  
     Complete Removal, Adhered .....13  
     Complete Removal, Underlayment .....18  
 Resilient Tile Floor Covering .....23  
     General Information .....23  
     Complete Removal, Existing Resilient Tile Floor Covering .....23  
     Complete Removal, Tile and Underlayment .....28  
 Preparation of Adhesive Coated Subfloors .....31

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# IMPORTANT INFORMATION FOR INSTALLERS OF RESILIENT FLOOR COVERINGS

## Introduction

The member companies of the Resilient Floor Covering Institute are manufacturers of the following forms of Resilient Floor Coverings:

1. Sheet Vinyl
2. Vinyl Floor Tile

While today these products do not contain asbestos, it is possible that in the past some of these products, including asphalt tile, may have contained firmly encapsulated asbestos fibers. In the past decade much attention has been focused on the relationship between exposure to asbestos fibers and respiratory ailments. It has been determined that inhalation of free airborne asbestos fibers may be injurious to health. However, the asbestos fibers contained in the above types of resilient floor coverings are **not free** but firmly encapsulated or **locked in** the product during the manufacturing process.

The Resilient Floor Covering Institute is providing this booklet of recommended work practices for installing or removing resilient floors so that you may proceed with this work in a prudent and protected manner.

There are several general rules to follow:

1. Unless positively certain that the floor is a non-asbestos product, presume it contains asbestos and treat it in the manner prescribed in this pamphlet for a floor containing asbestos.
2. It is preferred to install a new floor over a floor which contains asbestos rather than to remove that floor. This can be done by several methods – directly over the existing floor; installing new underlayment; or use of leveling compound following

installation procedures recommended by the floor covering manufacturer.

3. Removal should be considered the last alternative.
4. Never sand any resilient floor or it's backing to remove them from the floor (See Warning).
5. Use a vacuum equipped with a HEPA filter, disposable dust bag, and metal floor attachment (no brush).
6. All sheet removal must be done using detergent solution.
7. All tile removal must be done by wetting (misting) the tile prior to removal with a garden sprayer, except when heat s being used for removal.
8. All felt scraping must be done wet.
9. Do not dry sweep.
10. Material removed must be placed in heavy-duty polyethylene bags at least 6 mils thick or in a closed leak-tight container, properly labeled and disposed of in an authorized landfill.

## OSHA Requirements

In August 1994, OSHA published standards which affect some of the operations described in this booklet. OSHA has determine that "intact" resilient floor covering materials can be removed under a "negative exposure assessment" in compliance with the revised standards by appropriately trained Workers using the Recommended Work Practices.

- **"Intact"** is defined to mean that the asbestos-containing material has not crumbled, been pulverized or otherwise deteriorated so that it is no longer likely to be bound to its matrix. The incidental breakage of flooring materials, or slicing of sheet vinyl floor covering with a sharp edged instrument, during removal operations conducted in accordance with the Recommended Work Practices does not mean that the materials are not removed in an "intact" condition. OSHA has recognized that resilient floor covering materials are considered non-friable if intact and generally do not emit airborne fibers unless subjected to sanding, sawing, or other aggressive operations.
- Installers of resilient floor covering materials that plan to use the Recommended Work Practices outlined in this book to remove intact and nonfriable

asbestos-containing flooring materials are required to complete an 8-hour **training program**.

- Employers must designate a “**competent person**” with 4 hours of additional training to be responsible for the health and safety of the Workers at the floor removal job site.
- OSHA has determined that the competent person can make a “**negative exposure assessment,**” based upon data in the OSHA asbestos rulemaking record (including data from the ENVIRON reports) showing that the use of the Recommended Work Practices during removal of intact flooring material consistently results in Worker exposures below the levels permitted in the OSHA standards.
- Where other Workers or persons may have access to the flooring removal worksite, the employer must establish a demarcated “**regulated area**” and post warning signs.
- Workers who engage in the removal of asbestos-containing flooring materials for more than 30 days per year (one hour or more per day) must receive **medical surveillance**.

## **RECOMMENDED WORK PRACTICES**

### **PREPARATION OF FLOORS WITH EXISTING RESILIENT FLOOR COVERINGS TO RECEIVE NEW RESILIENT FLOOR COVERINGS**

Follow the installation instruction published by the manufacturer of the new floor covering when a new resilient sheet or tile floor covering is to be installed on a surface presently covered with a resilient floor covering. These instructions will tell you what must be done to the existing surface before the new resilient floor covering can be installed.

On the four general procedures listed below, Items 1a, b, and c are covered by manufactures’ instructions. Item 2 is covered specifically in this Work Practices Manual.

#### **1. Resilient Floor Covering Installed Over...**

- (a) **The Existing Surface.** Follow the manufacturer’s instruction for removing wax, filling in low spots, etc. **Use wet scrubbing. Never sand an existing resilient floor covering.**
- (b) **New Underlayment.** Install panels on top of the existing surface (wood subfloors only) and apply new floor coverings directly over this. Follow the manufacturer’s instructions.
- (c) **Leveling Compounds.** Follow the manufacturer’s instructions.

#### **2. Completely Removed Existing Resilient Floor Covering**

- (a) **Sheet Vinyl** – See instructions below:
  - (1) “Complete Removal of Peripherally Adhered Sheet Vinyl Floor Coverings,” page 8.
  - (2) “Complete Removal of Fully Adhered Sheet Vinyl Floor Covering,” page 13.
- (b) **Tile** – See instructions under heading, “Complete Removal of an Existing Resilient Tile Floor Covering,” page 23.

# SHEET VINYL FLOOR COVERING

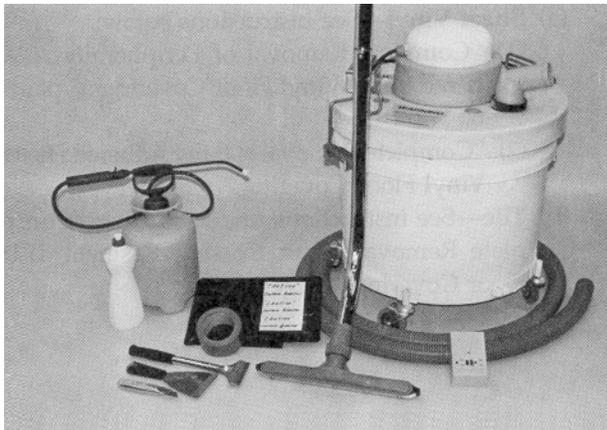
## Preparation of Floors with Existing Sheet Vinyl Floor Covering to Receive a New Resilient Floor Covering

Sheet vinyl floor covering can be installed over existing resilient sheet vinyl floor covering under certain conditions. Be sure to follow the floor covering manufacturer's instructions regarding the conditions and floor preparations required.

If complete removal of the existing sheet vinyl floor covering is required, the following instructions are to be followed:

### Supplies and Tools

1. Broad stiff-bladed wall scraper or floor scraper.
2. Utility or hook knife.
3. Tank type wet/dry HEPA (High Efficiency Particulate Air) filter vacuum cleaner with disposal dust bag and metal floor attachment (no brush).
4. Large size heavy-duty impermeable trash bags (at least 6 mils thick) or closed leak-tight containers, with ties, tapes, or string to tie shut and tags for labeling.
5. Garden sprayer.
6. A liquid dishwashing detergent which is stated to contain anionic, nonionic, and amphoteric surfactants. The detergent should be mixed with water to



Tools and supplies for sheet removal

6

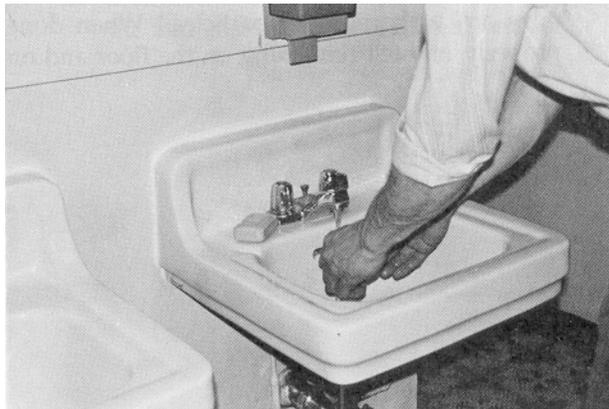


WARNING

**Never sand an existing floor covering and never sand or dry scrape residual felt.**

- make a dilute solution (1 oz. of detergent in one gallon of water).\*
7. Pressure sensitive labels.
  8. Ground fault circuit interrupter for connection of HEPA vacuum and any other electrical equipment.

**\*PRECAUTION:** Resilient flooring becomes slippery when wet with a detergent solution. Use caution to contain the solution in the immediate work area. Standing on a *new sheet of plywood* or non-slip surface while working is recommended.



WARNING

**Wash hands before eating and at the end of the work day.**

7

## COMPLETE REMOVAL OF PERIPHERALLY ADHERED SHEET VINYL FLOOR COVERING

### A. Preparation

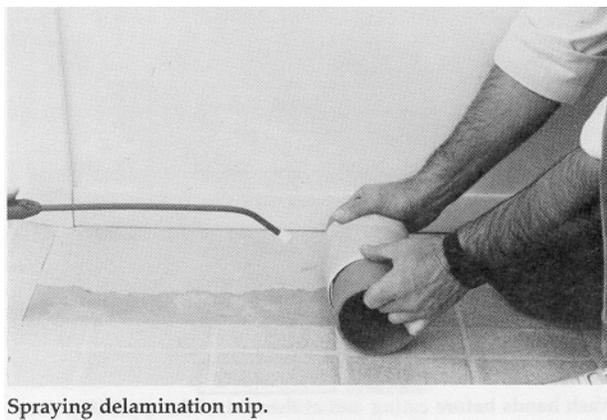
1. Move all appliances and furniture from the work area.
2. Remove all binding strips or other restrictive molding from doorways, walls, etc.
3. Mix a detergent solution (16 ounces of the specified liquid detergent [see Page 6, #6] to 1 gallon of warm water) and pour into a garden sprayer.
4. Clean the entire floor using a wet/dry vacuum cleaner equipped with a HEPA Filtration System and metal floor attachment (no brush). Do Not Sweep.



**WARNING**

**ELECTRICAL SHOCK HAZARD EXISTS; USE A GROUND FAULT CIRCUIT INTERRUPTER FOR ANY ELECTRICAL CONNECTIONS IN A WET ENVIRONMENT.**

- B. Make a slice in the adhered floor covering 4 to 8 inches wide, parallel with the walls, around the perimeter of the room.
- C. Start on either side of the entrance door, pry up the corner of the first strip, separating the backing layer. As the strip is being removed, a constant mist of the detergent solution must be sprayed into the delamination nip point to minimize any airborne dust particles.\* When done properly, Any felt remaining on the floor and on the back of the strip



Spraying delamination nip.

8

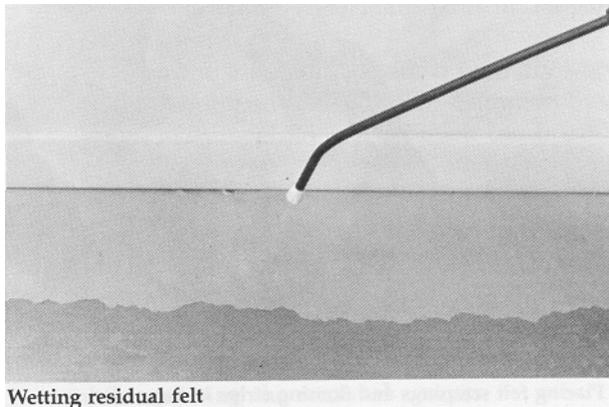
will be thoroughly wet. The strip is peeled by pulling upward at the angle that permits the best separation or by rolling around a core.

- D. Roll the strip tightly as it is removed. Tie or tape securely and place in a heavy-duty leak-tight trash bag or closed impermeable container for disposal.
- E. It may be necessary to remove a second strip following steps (B, C, D) if the unadhered subfloor area has not been exposed.  
**\*PRECAUTION:** Resilient flooring becomes slippery when wet with detergent solution. Use caution to contain the solution in the immediate work area. Standing on a *new sheet of plywood* or non-slip surface while working is recommended.
- F. Remove all of the exposed residual felt by wet scraping before proceeding.

**RESIDUAL FELT MUST BE REMOVED BY WET SCRAPING; DO NOT SAND OR DRY SCRAPE IN ANY WAY; DO NOT DRY SWEEP; AVOID CREATING DUST. SEE WARNING STATEMENT.**

### Wet Scraping Residual Felt

1. Thoroughly wet the residual felt with the detergent solution and allow a few minutes to soak.
2. Stand on the remaining floor covering (not the felt) and use the stiff-bladed scraper or a floor scraper with a replacement blade to remove the wet felt.



Wetting residual felt

9



**WARNING**

**Never sand or dry scrape residual felt. See Warning Statement.**

- 3. Re-wet the felt if the solution has not completely penetrated, if drying occurs or if dry felt is exposed during scraping. Scrape **all** felt from this floor area before proceeding further. Pick up the scrapings as they are removed from the floor and place in a heavy-duty impermeable trash bag or closed leak-tight container.

**PRECAUTION:** Wet residual felt as above but do not excessively soak or flood wood floors with detergent solution. Excessive water can damage wood floors to the extent that new underlayment could be required. A floor that has been wet scraped must be allowed to dry thoroughly before new resilient flooring is installed.

- G. Continue around the room completely removing the adhered flooring along the perimeter, one strip at a time following steps B through F. Do not remove the flooring in the entrance doorway until all other flooring has been completely removed.
- H. Place all flooring strips and felt scrapings immediately while wet into the recommended trash bags. Close full bags tightly and seal securely for disposal. Identify with a label stating, "Caution-Contains Asbestos. Avoid opening or breaking bag or container. Breathing asbestos may cause serious bodily harm." Dispose of in an approved landfill only.\*



Placing felt scrapings and flooring strips in bag.

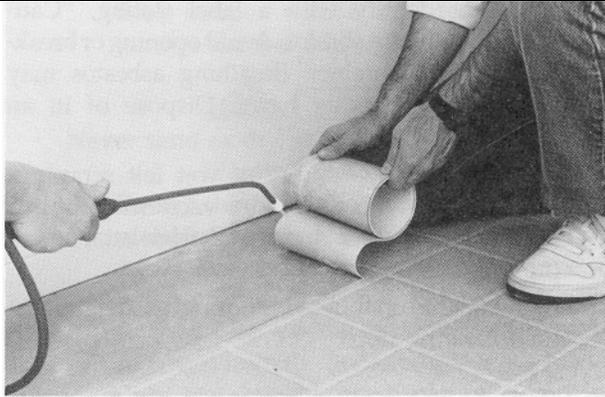
- I. Vacuum up any residue of wet felt scrapings immediately with a wet/dry vacuum equipped with a HEPA filter and metal floor attachment (no brush).
- J. Remove the unadhered flooring as detailed in the following steps.
- K. After vacuuming, used HEPA filters and cleaner bags should be removed according to the manufacturer's instructions and placed in a heavy-duty impermeable bag or leak-tight container with a label stating "Caution-Contains Asbestos. Avoid opening or breaking bag or container. Breathing asbestos may cause serious bodily harm." Dispose of in an approved landfill only.

**\*NOTICE**

Various federal, state and local government agencies have regulations covering the removal of asbestos-containing material. If you are considering the removal of resilient floor covering that contains, or is presumed to contain, asbestos you should review and comply with the appropriate regulations. The RFCI recommended work practices are designed to comply with the federal occupational asbestos permissible exposure limits.

**COMPLETE REMOVAL OF SHEET VINYL FLOORING IN UNADHERED AREAS AND FLOORING INSTALLED LOOSE LAID (WITHOUT ADHESIVE)**

- A. Preparation
  - Move all appliances and furniture from the work area.
  - Remove all binding strips or other restrictive molding from doorways, walls, etc.
  - Prepare a detergent solution (16 ounces of the specified liquid detergent [see Page 6, #6] to 1 gallon of warm water) and pour into a garden sprayer.
  - Clean the entire floor using a wet/dry vacuum cleaner equipped with a HEPA Filtration System and metal floor attachment (no brush). Do Not Sweep.
- B. Start at the end of the room farthest from the entrance doorway and slice a strip 18 inches wide in the unadhered flooring.
- C. Remove the sliced strips while spraying the detergent solution directly into the separation nip point.



Spraying the separation nip point.

Do not stand or kneel on the exposed subfloor during the removal process.\*

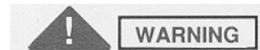
**\*PRECAUTION:** Resilient flooring becomes slippery when with a detergent solution. Use caution to contain the solution in the immediate work area. Standing on a *new sheet of plywood* or non-slip surface while working is recommended.

- D. Roll the wet strip tightly and tie or tape to secure. Continue working toward the doorway, slicing each strip and removing it while spraying the separation nip point with the detergent solution. Place the strips while still wet into a heavy-duty impermeable trash bag or closed leak-tight container. Close full bags tightly and seal securely for disposal. Identify with a label stating, "Caution-Contains Asbestos. Avoid opening or breaking bag or container. Breathing asbestos may cause serious bodily harm." Dispose of in an approved landfill only. (See NOTICE page 11).
- E. After removing three strips of flooring, vacuum the exposed floor using a wet/dry vacuum equipped with a HEPA filter and metal floor attachment (no brush).
- F. Seams and other adhered areas should be removed as they are encountered by stripping the wear surface while spraying the detergent solution into the delamination nip point and wet scraping the residual felt as previously described in complete removal of peripherally adhered flooring.
- G. Continue removing flooring doing only **one** three-strip area at a time until the entire floor has been completely removed.



Vacuuming exposed floor after removing three strips of flooring.

- H. When the whole floor has been completely removed, let it dry and vacuum up any dust using a vacuum with a HEPA Filtration System and a metal floor attachment (no brush). Stand only in vacuumed areas as you proceed across the floor. Position the vacuum cleaner so that discharge air does not blow on the floor being cleaned.

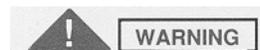


**Do not dry sweep; avoid creating dust. SEE WARNING STATEMENT.**

- I. After vacuuming, used HEPA filters and cleaner bags should be removed according to manufacturer's instructions and placed into a heavy-duty impermeable trash bag or closed leak-tight container. Close full bags tightly and seal securely for disposal. Identify with a label stating, "Caution-Contains Asbestos. Avoid opening or braking bag or container. Breathing asbestos may cause serious bodily harm." Dispose of in an approved landfill only.
- J. When the floor is dry, install the new resilient floor covering following manufacturer's installation recommendations.

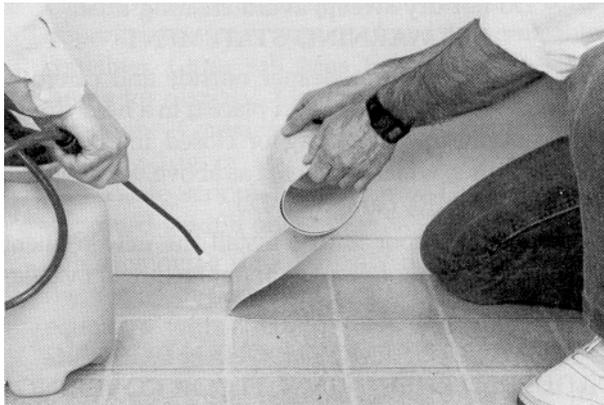
### COMPLETE REMOVAL OF AN EXISTING ADHERED SHEET VINYL FLOOR COVERING

If complete removal is required, follow these instructions:



**Never Sand an Existing Floor Covering**

- A. Preparation
1. Move all appliances and furniture from the work area.
  2. Remove all binding strips or other restrictive molding from doorways, walls, etc.
  3. Prepare a detergent solution (16 ounces of the specified detergent [See page 6] to 1 gallon of warm water) and pour into a garden sprayer.
  4. Clean the entire floor with a wet/dry vacuum equipped with a HEPA Filtration System and metal floor attachment (no brush). Do Not Sweep.
- B. Make a series of parallel slices 4 to 8 inches apart, parallel to a wall.
- C. Start at the end of the room farthest from the entrance door; pry up the corner of the first strip, separating the backing layer. As the strip is being removed, a constant mist of the detergent solution must be sprayed into the delamination nip point to minimize any airborne dust particles. When done properly, the felt remaining on the floor and on the back of the strip will be thoroughly wet. The strip is peeled by pulling upward at an angle that permits the best separation or by rolling around a core.



Spraying delamination nip.

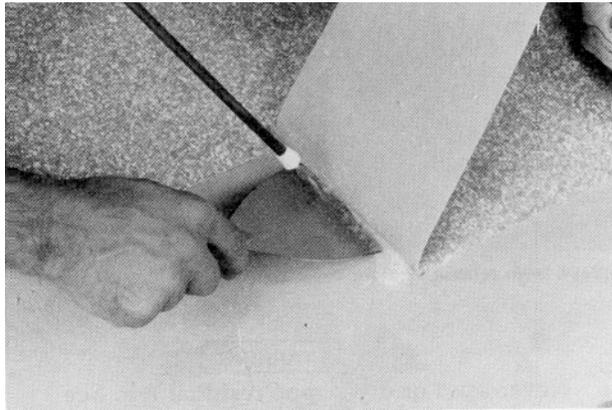


**ELECTRICAL SHOCK HAZARD EXISTS. USE A GROUND FAULT CIRCUIT INTERRUPTER FOR ANY ELECTRICAL CONNECTIONS IN A WET ENVIRONMENT.**

- D. Roll the strip tightly as it is removed. Tie or tape securely and place in a heavy duty leak-tight trash bag or closed impermeable container for disposal.
- E. Occasionally, parts of the foam inner-layer will remain stuck to the backing. This condition can sometimes be eliminated by pulling the strips loose from the opposite end. Peel the foam inner-layer from the floor while spraying the detergent solution into the delamination nip point.

Some resilient flooring is not readily strippable by hand. When those conditions are encountered, it may be necessary to employ a sharp, stiff blade scraper to assist cleavage of the wearlayer from felt (distance between cuts in wearlayer should be narrower, 3" to 5" wide).

**NOTE:** Regardless of which one of the previously mentioned methods is used for stripping the wear surface, the detergent solution must be sprayed into the delamination nip point to minimize any airborne dust particles.



Using stiff blade scraper to assist wet removal

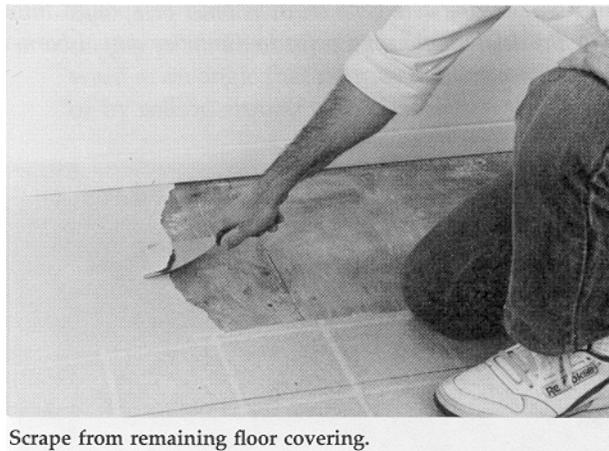
- F. Repeat the wetting and removal process on the next two strips, placing them immediately into the recommended trash bags or closed leak-tight containers for disposal.
- NOTE:** During the stripping process, do not stand or walk on the exposed felt.
- G. After removing three strips of the wear surface, the remaining residual felt must be removed by wet scraping before proceeding.



**RESIDUAL FELT MUST BE REMOVED BY WET SCRAPING; DO NOT SAND OR DRY SCRAPE IN ANY WAY; DO NOT DRY SWEEP; AVOID CREATING DUST. SEE WARNING STATEMENT.**

**H. Wet Scraping Residual Felt**

1. Thoroughly wet the residual felt with the detergent solution. Avoid excessive wetting or standing water. Wait a few minutes to allow the solution to soak into the felt.
2. Stand on the remaining floor covering (not the felt) and use the stiff-bladed scraper or a floor scraper with a replaceable blade to remove the wet felt.



Scrape from remaining floor covering.



**Never sand or dry scrape residual felt. See Warning Statement.**

3. Re-wet the felt if the solution has not completely penetrated, if drying occurs or if dry felt is exposed during scraping. Scrape **all** felt from this floor area before proceeding further. Pick up the scrapings as they are removed from the floor and place in a heavy-duty impermeable trash bag or closed leak-tight container.  
**PRECAUTION:** Wet residual felt as above but do not excessively soak or flood wood floors with detergent solution. Excessive water can damage

wood floors to the extent that new underlayment could be required. A floor that has been wet scraped must be allowed to dry thoroughly before new resilient flooring is installed.

4. After removing the three strips of flooring, vacuum the exposed floor using a wet/dry vacuum equipped with a HEPA filter and metal floor attachment (no brush).
- I. Repeat the operation (wetting the delamination nip point while removing the next three strips, then wet scrape the residual felt, then vacuum the exposed floor). Do only **one** three-strip area at a time until the entire floor has been completely removed.



**ELECTRICAL SHOCK HAZARD EXISTS, USE A GROUND FAULT CIRCUIT INTERRUPTER FOR ANY ELECTRICAL CONNECTIONS IN A WET ENVIRONMENT.**

- J. Place all flooring strips and felt scrapings immediately while wet into the recommended trash bags or closed leak-tight container. Close full bags tightly and seal securely for disposal.

Identify with a label stating, "Caution—Contains Asbestos. Avoid opening or breaking bag or container. Breathing asbestos may cause serious bodily harm." Dispose in an approved landfill only. (See NOTICE page 11.)



Proper disposal.



**WARNING**

**DO NOT DRY SWEEP; AVOID CREATING DUST. SEE WARNING STATEMENT.**

- K. When the whole floor has been completely removed, let it dry and vacuum up any dirt using a vacuum with a HEPA Filtration System and a metal floor attachment (no brush). Stand only in vacuumed area as you proceed across the floor. Position the vacuum cleaner so the discharged air does not blow on the floor being cleaned.



Vacuuming entire floor.

- L. Carefully remove the dust bag and place it in a heavy-duty impermeable trash bag or closed leak-tight container for disposal, which is labeled as above.
- M. When the floor is dry, it is ready to have a new resilient floor covering installed. Follow the floor covering manufacturer's instructions.

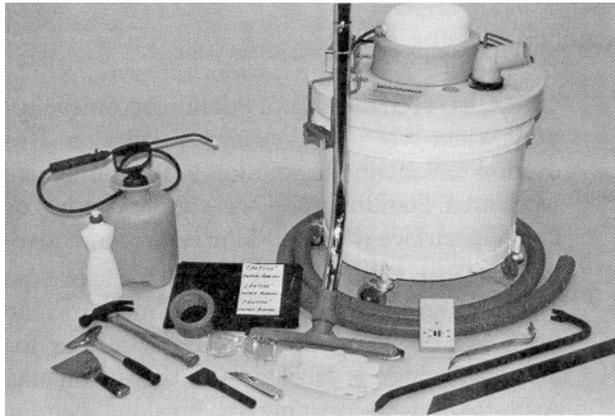
**COMPETE REMOVAL OF THIN WOOD UNDERLAYMENT COVERED WITH EXISTING SHEET VINYL RESILIENT FLOORING**

The removal of resilient flooring over wood subfloors using the wet stripping/wet scraping method may not be practical in cases where multiple layers of floor covering are present, where non-recommended underlayments were used, or where the flooring was made with a heavy foam backing. As an alternative, the

wood underlayment can be removed with the flooring adhered to it. Following are the details.

**A. Preparation**

- Move all appliances and furniture from the work area.
- Remove all binding strips or other restrictive molding from doorways, walls, etc.
- Prepare a detergent solution (16 ounces of the specified liquid detergent [See page 6] to 1 gallon of warm water) and pour into a garden sprayer.



Tools needed.

- Clean the entire floor with a wet/dry vacuum equipped with a HEPA Filtration System and metal floor attachment (no brush).
- B. Locate the joints of the underlayment panel farthest from the entrance door.
  - C. Slice a strip of the flooring 4 to 8 inches wide centered over the underlayment joint in the panel being removed.
  - D. Pry up the corner of the strip separating the backing layer. As the strip is being removed, a constant mist of the detergent solution must be sprayed into the delamination nip point to minimize any airborne dust particles.\* When done properly, any felt remaining on the floor and on the back of the strip will be thoroughly wet. The strip is peeled by pulling upward at an angle that permits the best separation or by rolling around a core.



Wet removal of strip over underlayment joint.

**\*PRECAUTION:** Resilient flooring becomes slippery when wetted with a detergent solution. Use caution to contain the solution in the immediate work area. Standing on a *new sheet of plywood* or non-slip surface while working is recommended.

- E. Roll the strip tightly as it is removed. Tie or tape securely and place in a heavy-duty impermeable trash bag or closed impermeable container for disposal, which is labeled “Caution—Contains Asbestos. Avoid opening or breaking bag or container. Breathing asbestos may cause serious bodily harm.” Dispose of in an approved landfill only.



**WARNING**

**RESIDUAL FELT MUST BE REMOVED BY WET SCRAPING; DO NOT SAND OR DRY SCRAPE IN ANY WAY; DO NOT DRY SWEEP; AVOID CREATING DUST. SEE WARNING STATEMENT.**

- F. Remove all of the exposed residual felt by wet scraping before proceeding.

**Wet Scraping Residual Felt**

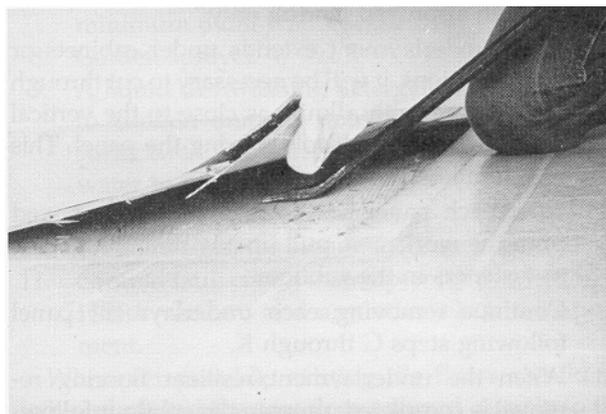
1. Thoroughly wet the residual felt with the detergent solution and allow a few minutes to soak.
2. Stand on the remaining floor covering (not the felt) and use the stiff-bladed scraper or a floor scraper with a replaceable blade to remove the wet felt.



**WARNING**

**Never sand or dry scrape residual felt. See Warning Statement.**

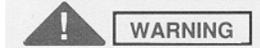
3. Re-wet the felt if the solution has not completely penetrated, if drying occurs or if dry felt is exposed during scraping. Scrape all felt from this floor area before proceeding further. Pick up the scrapings as they are removed from the floor and place in a heavy-duty impermeable trash bag or closed impermeable container.
  4. Continue around the underlayment panel completely removing the adhered flooring over the joints.
  5. Place all flooring strips and felt scrapings immediately while wet into the recommended trash bags or closed leak-tight containers. Close full bags tightly and seal securely for disposal. Identify with a label stating. “Caution—Contains Asbestos. Avoid opening or breaking bag or container. Breathing asbestos may cause serious bodily harm.” Dispose in an approved landfill only. (See NOTICE page 11.)
  6. Vacuum the exposed floor area using a wet/dry vacuum equipped with a HEPA filter and metal floor attachment (no brush).
- G. Drive a cold chisel using a hammer or mallet into the joint at a corner of the panel. Now use the chisel to pry the panel up far enough to insert a pry bar. Continue working around the panel, lifting all edges slowly. Use one or two pry bars to pry up the underlayment panel a little at a time until the panel



Prying up underlayment panel.

is completely loose and can be removed. Every attempt should be made to remove the panel in one piece.

- H. If the underlayment panel breaks, cut the resilient flooring at the break and spray the detergent solution onto the exposed felt. Allow the solution to penetrate for a few minutes, then continue lifting the broken underlayment.



**ELECTRICAL SHOCK HAZARD EXISTS. USE A GROUND FAULT CIRCUIT INTERRUPTER FOR ANY ELECTRICAL CONNECTIONS IN A WET ENVIRONMENT.**

- I. Remove each underlayment panel or piece from the work area as it is lifted to avoid injury. Wear heavy gloves when handling removed panels. Be very careful of wood splinters and protruding fasteners. Flatten the fasteners with a hammer and stack the panels back to back on pallets or place in dumpster. Identify panels with a label stating, "Caution—Contains Asbestos. Avoid breaking panels. Breathing asbestos may cause serious bodily harm." Dispose of in an approved landfill only. Place any small wood or flooring scraps in a heavy-duty impermeable trash bag or closed leak-tight container for disposal. Identify all of the containers and bags with a label stating, "Caution—Contains Asbestos. Avoid opening or breaking bag or container. Breathing asbestos may cause serious bodily harm." Dispose of in an approved landfill only.
- J. If the underlayment extends under cabinets or wall partitions, it will be necessary to slice through the flooring with a knife as close to the vertical surfaces as possible, deeply scoring the panel. This should allow removal.
- K. After each panel has been lifted and removed from the work area, pull up any remaining nails or fasteners in the subfloor.
- L. Continue removing each underlayment panel following steps G through K.
- M. When the underlayment/resilient flooring removal is completed, vacuum with a HEPA filter and metal floor attachment (no brush). Prepare the subfloor following the manufacturer's installation recommendations.

## **RESILIENT TILE FLOOR COVERING**

### **Preparation of Floors with Existing Resilient Tiles to Receive New Resilient Floor Covering**

Some resilient floor coverings can be installed over existing resilient tile installations. Follow the installation instructions published by the manufacturer of the new floor covering when a new resilient floor covering is to be installed on a surface presently covered with a resilient floor covering.

These instructions will tell you what must be done to the existing surface before the new resilient floor covering can be installed.



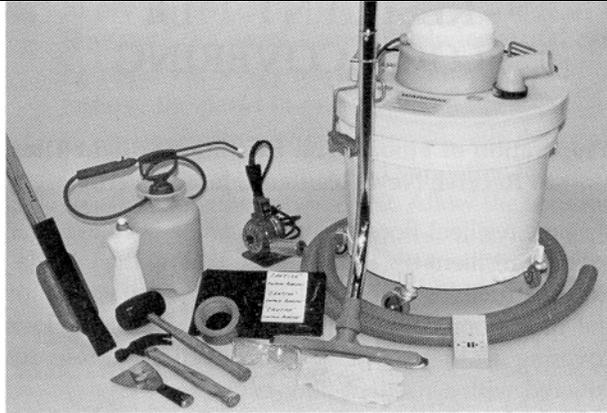
### **Never Sand an Existing Tile Installation**

### **COMPLETE REMOVAL OF EXISTING RESILIENT FLOOR COVERING**

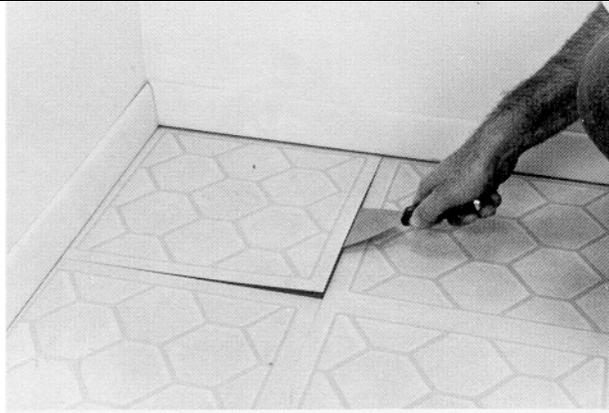
#### **Supplies and Tools**

1. Sharp stiff blade floor scraper.
2. Weighted scraper with long handle.
3. Safety glasses.
4. Hammer.
5. Hot air gun or a radiant heat source.
6. Wet/dry vacuum with a HEPA Filtration System and metal floor attachment (no brush).
7. Heavy-duty, impermeable, plastic trash bags with minimum 6 mil wall thickness or leak-tight containers.
8. Garden sprayer.
9. A liquid dishwashing detergent which is stated to contain anionic, nonionic, and amphoteric surfactants. The detergent should be mixed with water to make a dilute solution (1 oz. of detergent to one gallon of water).
10. Pressure-sensitive labels 3" x 5" or larger.
11. Ground fault circuit interrupter for connection of HEPA vacuum and any other electrical equipment.

Whenever possible, existing tile floors should be left in place and the new floor adhered directly to the tile following manufacturer's directions.



Tools needed.



Start tile removal in corner

Occasionally, there is no alternative except to remove the tile; curling, poor bond and breakage are common reasons. If removal is unavoidable, consideration must also be given to subfloors coated with asphalt tile adhesive. The following procedures address the recommended work practice for removal of floor tile and preparation of adhesive-coated floors.

*Removal Procedure*

A. Preparation

1. Move all appliances and furniture from the work area.
2. Remove all binding strips or other restrictive molding from the doorways, walls, etc.
3. The entire floor should be cleaned with a wet/dry vacuum equipped with a HEPA Filtration System and a metal floor attachment (no brush). Do Not Sweep.
4. Floor tiles must be wetted (misted with a garden sprayer) before actual removal begins, unless heat will be used to remove tiles.

B. Those areas normally exposed to heavy foot traffic patterns usually have tiles adhered the tightest. As a matter of good practice in starting the tile removal, those sections which receive the least traffic should be the locations selected for starting the removal of the tile. It should be the goal to remove individual tiles as a complete unit although breakage of tiles is unavoidable.

C. Start the removal by carefully wedging the wall scraper in the seam of two adjoining tiles and gradually forcing the edge of one of the tiles up and

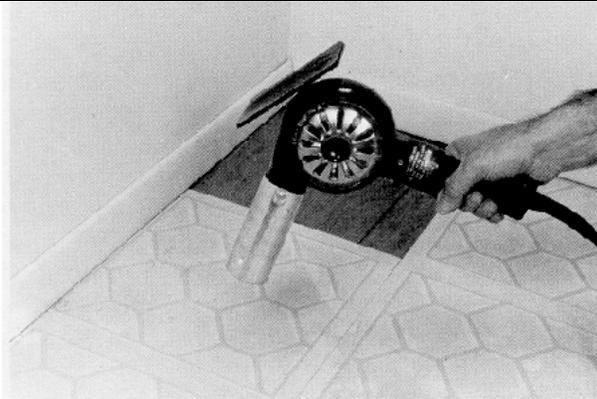
away from the floor. Continue to force the balance of the tile up by working the scraper beneath the tile and exerting both a forward pressure and a twisting action on the blade to promote release of the tile from the adhesive and the floor.

- D. When the first tile is removed, place it, without breaking it further into smaller pieces, in a heavy-duty impermeable trash bag or closed leak-tight container which will be used for disposal.
- E. With the removal of the first tile accessibility of the other tile is improved. Force the wall scraper under the exposed edge of another tile and continue to exert a prying twisting force to the scraper as it is moved under the tile until the tile releases from the floor. Again, dispose of the tile, and succeeding tiles, by placing in the heavy-duty bag or closed leak-tight container without additional breaking.
- F. Some tiles will release quite easily while others require varying degrees of force. Where the adhesive is spread heavily or is quite hard, it may prove easier to force the scraper though the tightly adhered areas by striking the scraper handle with a hammer using blows of moderate force while maintaining the scraper at a 25° to 30° angle to the floor.

**Continue to wet (mist) the tiles with a garden sprayer.**

**Caution:** Use safety goggles.

- G. If some areas are encountered where even the technique detailed in the previous paragraph proves to be inadequate, the removal procedure can be simplified by thoroughly heating the tile(s) with a hot air blower or a radiant heat source until the heat penetrates through the tile and softens the adhesive.



Use hot air blower to assist removal.

**NOTE:** Handle the hot air blower or a radiant heat source, tiles and adhesive carefully to avoid personal burns.

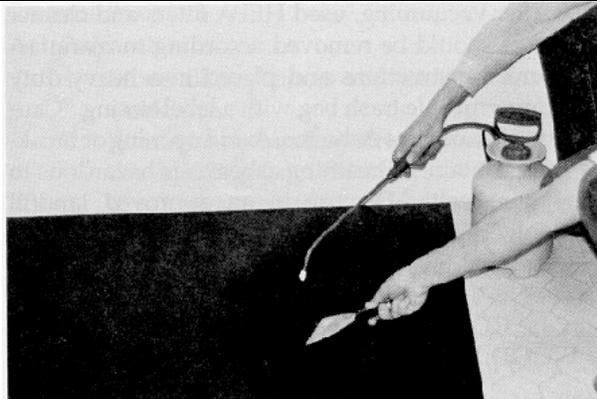
**NOTE:** Do not handle the heated tiles and adhesive without suitable glove protection for the hands.

- H. As small areas of subfloor are cleared of tile, the adhesive remaining on the floor must be treated. The degree of treatment for residual cut-back adhesive is dependent upon the type of new resilient floor covering material to be installed and the type of subfloor. See page 31 **Preparation of Adhesive Coated Subfloor** for special recommendations.

If new resilient floor tile is to be installed over a concrete subfloor using an asphaltic adhesive, the residual asphaltic “cut-back” adhesive must be left so that no ridges or puddles are evident and what remains is a thin, smooth film.

*Wet Scraping Residual Adhesive*

- (1) Start in the corner of the room farthest from the entrance door and moisten an area approximately 3' x 10' with water mixed with the specified liquid dishwashing detergent (1 oz. specified liquid dishwashing detergent to one gallon of water) to aid in wetting the adhesive. Wet scrape with a stiff-bladed wall or floor scraper removing ridges and any loose adhesive.
- (2) Place loosened adhesive residues into a heavy-duty impermeable trash bag or other leak-tight container and seal with ties, tape or string and label “Caution—Contains Asbestos. Avoid opening or breaking container. Breathing asbestos is hazardous to your health.” Dispose in an approved landfill



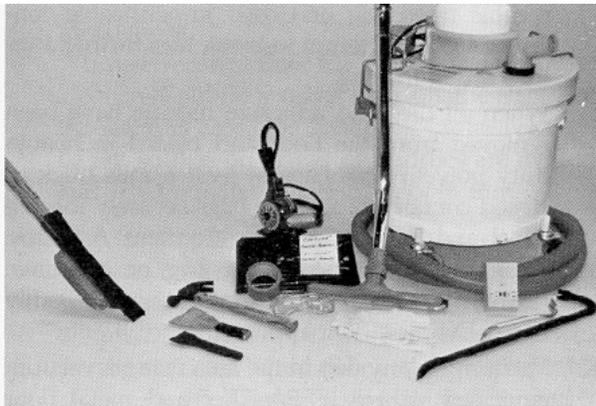
Wet scraping adhesive ridges.

- only.
  - (3) Wet vacuum standing water with HEPA wet/dry vacuum.
  - (4) Continue steps (1) through (3) until what remains of the residual asphaltic “cut-back” adhesive is a thin, smooth film.
- I. As indicated in previous paragraphs, tiles should be placed immediately in a heavy-duty impermeable trash bag or closed leak-tight container. Do not attempt to break tiles further after they are in the bag.
  - J. When all tiles and adhesive residue have been removed from the floor and placed in heavy-duty polyethylene bags at least 6 mils thick or closed containers, seal the bags securely for disposal and label, “Caution—Contains Asbestos. Avoid opening or breaking bag or container. Breathing asbestos may cause serious bodily harm.” Dispose in an approved landfill only.
  - K. Vacuum up any dirt in the area using a vacuum equipped with a HEPA filter and metal floor attachment (no brush).
  - L. After vacuuming, used HEPA filters and cleaner bags should be removed according to manufacturer’s instructions and placed in a heavy-duty impermeable trash bag or a leak-tight container with a label stating “Caution—Contains Asbestos. Avoid opening or breaking container. Breathing asbestos is hazardous to your health.” Dispose in an approved landfill only. Close and seal the trash bags securely for disposal.

**COMPLETE REMOVAL OF THIN WOOD UNDERLAYMENT COVERED WITH EXISTING TILE**

**Supplies and Tools**

1. Chisel.
2. Hammer or mallet.
3. Short- and long-handled pry bars.
4. Heavy gloves.
5. Sharp stiff-blade floor scraper.
6. Weighted scraper with long handle.
7. Safety goggles.
8. Garden Sprayer.
9. Hammer.
10. Hot air gun.
11. Wet/dry vacuum with a HEPA Filtration System and metal floor attachment (no brush).
12. Heavy-duty, impermeable, plastic trash bags with minimum 6 mil wall thickness.
13. Pressure-sensitive labels 3" x 5" or larger.
14. Ground fault circuit interrupter for connection of HEPA vacuum and any other electrical equipment.



Tools and supplies.

*Removal Procedure*

- A. Preparation
1. Move all appliances and furniture from the work area.
  2. Remove any binding strips or other restrictive molding from doorways, walls, etc.
  3. The entire floor should be cleaned with a wet/dry vacuum equipped with a HEPA Filtration System and a metal floor attachment (no

brush). Do Not Sweep.

4. Floor tiles must be wetted (misted with a garden sprayer) before actual removal begins, unless heat will be used to remove tiles.
- B. Starting at the doorway or a floor ventilation vent, locate a joint in an underlayment board.
- C. Start the removal by carefully wedging the wall scraper in the seam of two adjoining tiles and gradually forcing the edge of one of the tiles up and away from the floor. Continue to force the balance of the tile up by working the scraper beneath the tile and exerting both a forward pressure and a twisting action on the blade to promote release of the tile from the adhesive and the floor. Continue to remove tile in this manner at all joints, until all board joints are exposed.
- D. When the first tile is removed, place it, without breaking it further into smaller pieces, in a heavy-duty impermeable trash bag or closed leak-tight container which will be used for disposal.
- E. With the removal of the first tile accessibility of the other tile is improved. Force the wall scraper under the exposed edge of another tile and continue to exert a prying twisting force to the scraper as it is moved under the tile until the tile releases from the floor. Again, dispose of the tile, and succeeding tiles, by placing in the heavy-duty bag or closed leak-tight container without additional breaking.
- F. Some tiles will release quite easily while others require varying degrees of force. Where the adhesive is spread heavily or is quite hard, it may prove easier to force the scraper through the tightly adhered areas by striking the scraper handle with a



Removal of tile over subfloor joint.

hammer using blows of moderate force while maintaining the scraper at a 25° to 30° angle to the floor.

**Continue to wet (mist) the tiles with a garden sprayer.**

**Caution:** Use safety goggles.

- G. If some areas are encountered where even the technique detailed in the previous paragraph proves to be inadequate, the removal procedure can be simplified by thoroughly heating the tile(s) with a hot air gun until the heat penetrates through the tile and softens the adhesive.

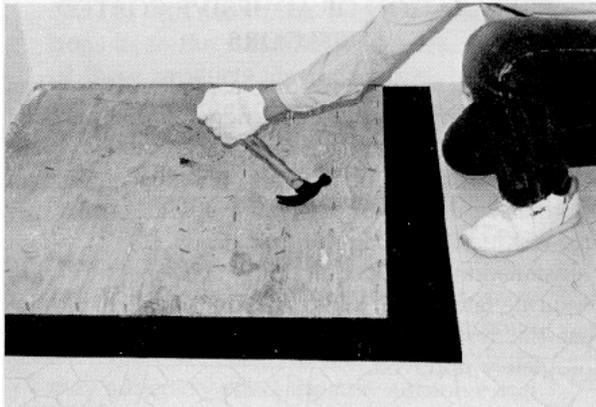
**NOTE:** Handle the hot air gun, tiles and adhesive carefully to avoid personal burns.

**NOTE:** Do not handle the heated tiles and adhesive without suitable glove protection for the hands.

- H. After all the tiles have been removed from the underlayment joints, drive a chisel, using a hammer or a mallet, between the underlayment board and the subfloor. Use the chisel to pry up the underlayment enough to insert a pry bar and remove the chisel. Slowly and carefully use pry bars to pry up the underlayment board a little at a time until the board is completely loose and can be removed.

- I. Caution must be used to avoid breaking the underlayment board. The underlayment board should be removed in one piece. If the underlayment board breaks, heat and slice the tile at the break, then continue to remove broken underlayment.

- J. Wear heavy gloves and be very careful of wood splinters and fasteners sticking out of the back of the underlayment. Each underlayment board (or piece of board) should be removed from the work area as soon as it has been pried up to avoid injuries



Removing nails and staples from underlayment.

(such as stepping on a nail). Fasteners protruding from a removed board should be flattened with a hammer. Place removed underlayment boards on skids with the nails pointing downward. Wrap skid with 6 mil polyethylene plastic sheeting and secure with duct tape. Identify with a label stating "Caution-Contains Asbestos. Avoid opening or breaking container. Breathing asbestos may cause serious bodily harm." Dispose in an approved landfill only.

- K. After each board has been removed, pull out any nails or fasteners still in the subfloor. Dispose of these and any other nails or fasteners which have been removed but are still lying in the work area.
- L. A chisel is not needed to start the removal of boards after the first board has been removed. Simply work the pry bar under the exposed edge of the next board.
- M. When removal of the underlayment/existing tile floor is complete, thoroughly check the exposed subfloor. Renail loose areas and reset any "popped" nails or fasteners.
- N. Vacuum up any dirt in the area using the vacuum cleaner equipped with the HEPA filter and metal floor attachment (no brush).
- O. After the underlayment is completely removed, install the new underlayment and/or floor covering according to the manufacturer's installation instructions.



**Warning Regarding Complete Adhesive Removal: Some Solvent Based "Cut-Back" Asphaltic Adhesives May Contain Asbestos Fibers That Are Not Readily Identifiable. Do Not Use Power Devices Which Create Asbestos Dust in Removing These Adhesives. The Inhalation of Asbestos Dust May Cause Asbestosis or Other Serious Bodily Harm. Smoking Greatly Increases the Risk of Serious Bodily Harm.**

#### PREPARATION OF ADHESIVE COATED SUBFLOORS

The removal of latex based adhesives commonly used with vinyl sheet floors and some tiles can be accomplished by wetting the adhesive residue (which will soften the adhesive) and scraping. Do not use an excessive amount of water which can damage wood subfloors.

The degree to which residual asphalt adhesive has

to be removed depends on the new flooring material which is being installed. Generally installation of Vinyl Composition Tile requires only the wet removal of adhesive ridges, excess adhesive, and loose adhesive residues. (See page 26, paragraph H).

Installation of sheet flooring and specialty tiles requiring latex, resin, or epoxy adhesives will require that the residual asphaltic adhesive be essentially completely removed.

**I. Recommended Method for Preparing Concrete Subfloors Coated with Cut-Back or Emulsion Tile Adhesive.**

Unless positively certain that the adhesive is a non-asbestos product presume it contains asbestos and treat it in the manner prescribed in the pamphlet for a cut-back or emulsion tile adhesive containing asbestos.

**A. Trowelable Underlayment**

Cover the adhesive residue with trowelable underlayment following the manufacturer's recommended application procedures. (Recommended for residential use only.) Patching compounds are not effective barriers to material migrating from asphaltic adhesives.

**B. Self-Leveling Cementitious Underlayment**

Follow manufacturer's recommendations for use of these types of underlayments as a covering for adhesive coated concrete.

**NOTE:** All warranties and recommendations as to the suitability and performance of these products are the responsibility of the manufacturer of the underlayment.

**C. Adhesive Removers**

**The Resilient Floor Covering Institute does not recommend or approve the use of those products.** There are a number of commercial adhesive removers on the market that will properly remove cut-back or emulsion adhesive residue from a subfloor; however, there are concerns that these products may adversely effect the new adhesive and new floor covering.

**D. Wet Removal**

**Supplies and Tools**

1. Broad stiff-bladed wall or floor scrapers, a 4-inch wide blade with handle is recommended.
2. No. 1 sandblasting sand (clean, sharp, coarse cutting sand).

3. Terrazzo or low-speed floor machine fitted with a floor plate attachment (Clark Assy. 500212-6).
4. Hand-held rubbing stones.
5. Wet/dry tank-type vacuum cleaner equipped with High Efficiency Particulate Air (HEPA) filter and metal floor attachment (no brush).
6. Heavy-duty polyethylene bags at least 6 mil thick, tape or ties, and labels.
7. Slip-resistant shoes or rubber heels.
8. Ground fault circuit interrupter for electrical connection of the HEPA vacuum and any other electrical connections required.
9. Garden sprayer.
10. A liquid dishwashing detergent which is stated to contain anionic, nonionic, and amphoteric surfactants. The detergent should be mixed with water to make a dilute solution (1 oz. of liquid in one gallon of water).

**Procedure**

1. Start in the corner of the room farthest from the entrance door and moisten an area of the adhesive approximately 3' x 10' with water mixed with liquid dishwashing detergent (to aid in wetting the adhesive). Wet scrape with a stiff-bladed wall or floor scraper removing ridges and any loose adhesives, until only a thin smooth film remains.
2. Place loosened adhesive residues into a heavy-duty impermeable trash bag or other impermeable container and seal with ties, tape or string and label "Caution—Contains Asbestos. Avoid opening or breaking bag or container. Breathing asbestos may cause bodily harm." Dispose in an approved landfill only.
3. Wet vacuum standing water with HEPA wet/dry vacuum.
4. Continue steps 1 through 3 until entire area is wet scraped.
5. Place cutting sand into a container (enough to cover an approximate 6' x 6' area), add water mixed with liquid detergent (1 oz. of the specified detergent [See #10 above] to one gallon of water) to the sand to dampen (20 lbs. of sand to ½ gallon of solution).
6. Place sand over a 6' x 6' area and wet remove the existing adhesive residue using a terrazzo floor machine. Keep sand under rubbing stones when operating the machine. The sand and the subfloor

must be continuously kept wet.

7. Occasionally push away cutting sand from the subfloor with a wall or floor scraper to check for complete removal.
8. Adhesive around the edge of the room and areas that were missed can be removed with dampened, clean, sharp cutting sand and a hand-held rubbing stone.
9. Wet scrape sand into a pile using a stiff-bladed floor or wall scraper and place sand and adhesive residue in a heavy-duty impermeable container, seal with ties or tape and label "Caution—Contains Asbestos. Avoid opening or breaking bag or container. Breathing asbestos may cause bodily harm." Dispose in an approved landfill only.
10. Rinse area with clear, clean water using the hand sprayer. Worker boots should also be rinsed and cleaned.
11. Wet vacuum standing water with a wet/dry vacuum equipped with a HEPA filter and metal floor attachment (no brush).
12. Continue steps 1 through 8 until the entire room is complete.
13. Allow subfloor to dry and vacuum up any remaining dirt or sand using a vacuum equipped with a HEPA filter and metal attachment (no brush).
14. After vacuuming, used HEPA filters and cleaner bags should be removed according to manufacturer's instructions and placed in a heavy-duty impermeable trash bag or a leak-tight container with a label stating "Caution—Contains Asbestos. Avoid opening or breaking container. Breathing asbestos is hazardous to your health." Close and seal the trash bags or container securely for disposal. Dispose in an approved landfill only.

E. Alternate Wet Removal Method

**Supplies and Tools**

1. Supplies and tools listed as items 1, 5, 6, 7, 8, 9 and 10 in Section D above, as well as the following:
2. Floor machine fitted with a 3M black floor pad (or equivalent).
3. Removal solution: "mop on, mop off, no machine scrub," stripping solution.
4. Water-absorbent material.

**Procedure**

1. Start in corner of the room farthest from the entrance door. Put the removal solution onto the residual

adhesive with a hand sprayer or mop over a 6' x 6' area. Put enough removal solution ("mop on, mop off, no machine scrub," stripping solution) on to ensure that the area is thoroughly wet. Allow the area to soak for 5-10 minutes. Remove the adhesive using a floor machine equipped with a 3M black floor pad (or equivalent). **The subfloor must be continuously kept wet.**

2. Occasionally push away the adhesive slurry from the subfloor with a wall or floor scraper to check for complete removal. Continue to use the floor machine, equipped with the black pad, in the same area until the concrete subfloor is cleaned to the desired degree. (This depends on what material will be reinstalled.)
3. Adhesive around the edge of the room and areas that were missed or difficult to reach with the machine can be removed with handheld piece of the black floor pad using the above procedures.
4. Wet HEPA vacuum the adhesive slurry. When the HEPA vacuum is full, place a commercially suitable water absorbent into the HEPA container until the adhesive slurry is absorbed. Place adhesive waste from The HEPA vacuum into heavy-duty impermeable bags or leak-tight container and seal with ties or tape and label "Caution—Contains Asbestos. Avoid Creating Dust. Breathing Asbestos May Cause Bodily Harm." Dispose in an approved landfill only.
5. Rinse floor area with clear, clean water using a hand sprayer or mop.
6. Wet vacuum standing water with HEPA wet/dry vacuum.
7. Continue steps 1 through 6 until the entire room is complete.
8. Allow subfloor to dry and vacuum with a HEPA vacuum.



**ELECTRICAL SHOCK HAZARD EXISTS. USE A GROUND FAULT CIRCUIT INTERRUPTER FOR ANY ELECTRICAL CONNECTIONS IN A WET ENVIRONMENT.**

**II. Recommended Methods for Preparing Wood Subfloor Coated with Cut-Back or Emulsion Adhesive**

A. Trowelable Underlayment

Cover the adhesive residue with trowelable underlayment following manufacturer's recom-

mended application procedures. (Recommended for residential use only.)

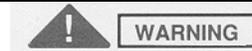
B. Wood Panel Underlayment

Normally it will not be necessary to remove the old tile when installing underlayment\* over a single layer of tile. However, if the tile must be removed, the tackiness of the adhesive must be “dried-up” before installing new underlayment. This can be done by spreading a layer of powder from latex patching compound (either type) and vacuuming up the excess. Another method is to place a layer of asphalt saturated pattern scribing felt or two layers of newspaper over the tacky adhesive residue before the underlayment is installed. If the old adhesive is not “dried-up” before the underlayment is installed, there is the possibility that a “cracking” sound will be heard when the new floor is walked on, creating an unsatisfactory condition. This occurs because the underlayment is pressed into the tacky adhesive by foot traffic. When the pressure is released, the underlayment sticks momentarily and then springs from the tacky adhesive, creating a “cracking” noise.

C. Removal of Adhesive Coated Underlayment Panels

If removal of the existing underlayment panels is necessary, follow the procedure outlined under “Complete Removal of Thin Wood Underlayment Covered with Existing Resilient Flooring” steps G-M (page 28-31).

\*See manufacturer’s recommendations for approved underlayment types.



**Do not sand, dry sweep, dry scrape, drill, saw, beadblast, or mechanically chip or pulverize existing resilient flooring, backing, lining felt or asphaltic “cut-back” adhesives.**

**These products may contain either *asbestos fibers* or *crystalline silica*.**

**Avoid creating dust. Inhalation of such dust is a cancer and respiratory tract hazard.**

**Smoking by individuals exposed to asbestos fibers greatly increases the risk of serious bodily harm.**

**Unless positively certain that the product is a non-asbestos containing material, you must presume it contains asbestos. Regulations may require that the material be tested to determine asbestos content.**

**The RFCI’s *Recommended Work Practices for Removal of Resilient Floor Coverings* are a defined set of instructions which should be followed if you must remove existing resilient floor covering structures.**

*Issued by*  
Resilient Floor Covering Institute  
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August 1995

This publication replaces prior editions of these work practices. Future editions of these work practices may be issued to replace this publication.

APPENDIX C  
Training Course Outline  
Removal of Resilient Floor Coverings in Accordance with Appendix B

All underlined text in this regulation indicates defined terms; clicking on underlined text will take you to its definition in Section I.

These courses are designed to train Workers to remove asbestos containing flooring materials in accordance with Appendix B to this regulation. Unless the flooring materials are removed in accordance with sections I, II, and III of this regulation, persons who remove asbestos-containing flooring materials must complete the 8-hour employee training course, including receiving a passing examination grade; persons who supervise the removal of asbestos-containing flooring materials must complete the 8-hour employee training course (including receiving a passing examination grade) and then successfully complete the additional course, including receiving a passing grade on a separate examination covering sections 10-13 of this outline. NOTE: Completion of these training courses does not satisfy the training requirements for Colorado certification as an asbestos abatement Worker or asbestos abatement Supervisor as provided in section II of this regulation.

8-HOUR EMPLOYEE TRAINING COURSE

- Section 1     Background Information on Asbestos (slides, lecture, workbook, quiz)
- Characteristics of asbestos
  - Categories of asbestos-containing building materials
  - Friable and nonfriable condition of materials
  - List of suspect asbestos-containing materials
  - Determination/identification of asbestos-containing materials (including presumptions regarding flooring materials)
  - Control options
  - Potential health effects related to exposure to airborne asbestos
  - Hazards of smoking and asbestos exposure
  - Protective work practices and controls to minimize asbestos exposure
- Section 2     Laws and Regulations (video, slides, lecture, workbook, quiz)
- Current regulations concerning the removal and disposal of asbestos-containing materials
  - Regulated areas/Respirators/Negative Air Pressure/Protective Clothing/Decontamination Procedures
  - How regulations are enforced
  - Federal Government agencies that regulate asbestos removal  
    OSHA Asbestos Standard  
    EPA NESHP  
    EPA AHERA and ASHARA  
    DOT Regulations
  - Difference between federal and state asbestos laws
  - State and local asbestos regulations
  - Hazard Communication Standard and safety issues

- Section 3 [Asbestos-Containing Resilient Flooring Materials](#)  
(slides, lecture, workbook, quiz)
- Walk through survey versus bulk sample analysis
  - Types of floor coverings, which contain [asbestos](#)
  - Determining friability of resilient floor coverings ([EPA](#) Recommended Test)
  - Flooring adhesives, which contain asbestos
  - Alternatives to removing [asbestos-containing](#) floor covering and adhesives
  - Methods which should not be used to remove resilient floor covering materials
  - Waste disposal procedures
  - Notification requirements
- Section 4 [Removal of Resilient Floor Tile](#)
- Video demonstration of properly removing floor tile
  - Live demonstration of properly removing floor tile
  - "Hands on" student practice removing floor tiles using heat and without heat
  - Quiz
- Section 5 [Removal of Residual Asphaltic Adhesive](#)
- Video demonstration of proper procedure for removing adhesive
  - Review of proper procedure for removing adhesive
  - "Hands on" student practice removing adhesive
  - Quiz
- Section 6 [Removal of Resilient Sheet Flooring](#)
- Video demonstration of proper procedure for removing sheet flooring
  - Live demonstration of proper procedure for removing sheet flooring
  - "Hands on" student practice removing sheet flooring
  - Quiz
- Section 7 [Complete Removal of Wood Underlayment](#)
- Video demonstration of proper procedures for removing resilient flooring complete with underlayment
  - Review of proper procedures for complete [removal](#) of wood underlayment
- Section 8 [Review](#)
- Review previous instruction and clarify any unanswered questions
- Section 9 [Examination Covering sections 1-7](#)

**ADDITIONAL TRAINING COURSE FOR PERSONS SUPERVISING  
THE REMOVAL OF FLOORING MATERIALS  
(4-Hour Minimum)**

- Section 10 [Prewrite Activities and Considerations](#)
- Determination of [asbestos-containing materials](#)
    - Methods of identification
    - Walk through survey/bulk sampling
    - Common building materials containing [asbestos](#)

- Review of regulations
  - [OSHA](#)
  - [EPA](#)
  - DOT
  - State and Local

Section 11 Assessment of the Work Area

- Site preparation considerations
- Conducting a Negative Exposure [Assessment](#)
- Isolating the [work area](#)
- Adjacent areas
- Regulated areas
- Safety hazards

Section 12 Notification, Recordkeeping, and Waste Disposal

- Recordkeeping requirements
- Notification requirements
- Warning signs
- Special equipment
- Transport and disposal of [asbestos](#) waste

Section 13 Supervising Workers

- Establishing goals
- Providing clear instructions
- Establishing expectations
- Use of Supervisory authority
- Motivating Workers

Section 14 Review and Examination

- Review
- Examination (covering sections 10-13)

## A

ACBM, 2, 5, 8, 9, 10, 13, 57, 58, 59, 60, 61, 62, 63, 65, 66, 67, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 85. (see asbestos containing building material)

ACM, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 13, 27, 30, 33, 35, 39, 41, 42, 43, 44, 45, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 67, 69, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85. (see asbestos containing material)

ACWM, 3, 13, 38, 39, 46, 47, 54. (see asbestos containing waste material)

adequately wet, 2, 41, 42, 49, 54, 55

air cleaning, 37, 86, 87, 88

air monitoring, 2, 19, 20, 21, 22, 24, 25, 26, 29, 35, 36, 43, 44, 45, 50, 51, 52, 54, 66, 67, 79, 84, 85, 92, 93, 100

- clearance air monitoring, 36, 54
- maximum allowable asbestos level, 52, 82, 90, 100
- negative air machine exhaust, 36

Air Monitoring Specialist, 19, 20, 21, 22, 24, 25, 26, 29, 30, 43, 44, 46, 51, 52, 85, 92, 93

airless sprayers, 54

alternative procedures, 32, 42, 55

analysis, 27, 45, 46, 52, 53, 58, 59, 61, 62, 65, 73, 75, 80, 82, 84, 124

asbestos abatement, 3, 4, 8, 9, 16, 25, 26, 28, 29, 30, 31, 32, 34, 35, 36, 38, 39, 40, 41, 43, 46, 47, 48, 50, 53, 79, 90, 92, 93, 98, 123

asbestos cement, 48

asbestos cement products, 48

asbestos containing building material, 2

asbestos containing material, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 27, 30, 33, 35, 39, 41, 42, 43, 44, 45, 49, 50, 51, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 67, 68, 69, 72, 73, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 103, 121

asbestos containing waste material, 3, 12, 38, 39, 46, 47, 49, 54, 91

asbestos spill, 50, 51, 52, 53

asbestos-contaminated soil, 39, 49

asphaltic, 49, 103, 116, 119, 121

asphaltic materials, 49

assessment, 57, 59, 62, 63, 79, 80, 82, 83, 104, 105

## B

bulk, 8, 58, 59, 60, 61, 72, 73, 80, 81, 82, 124

bulk sample analysis, 61, 82, 124

## C

certification and training requirements, 48, 49, 55

- course approval, 23
- examinations, 25
- reciprocity, 24

clearance air monitoring, 35, 36, 54

clearing abatement projects, 37, 44, 45, 50, 54, 100

containment, 4, 8, 9, 35, 37, 39, 40, 41, 42, 43, 49, 52, 53, 54, 55, 67, 99

contaminated soil, 39, 49

course approval, 23

coveralls, 39, 99

critical barriers, 35, 36, 44, 46

## D

decontamination unit, 12, 30, 38, 39, 41, 46

demolition, 5, 9, 27, 30, 31, 32, 55, 80, 94

disposal, 6, 39, 42, 47, 49, 75, 76, 84, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 120, 123, 124, 125

## E

emergencies, 5, 30, 31, 37, 39, 43, 56, 58, 89

encapsulation, 6, 10, 45, 64, 65, 66, 67

examinations, 90

exclusion, 78, 84, 85, 92

## F

fabricating, 6, 87, 88  
facility, 2, 4, 5, 6, 7, 10, 11, 14, 27, 30, 31, 33, 38, 41, 42, 43, 48, 54, 55, 88, 91, 99  
facility components, 3, 10, 11, 42, 54  
final visual inspection, 6, 19, 21, 22, 29, 36, 43, 44, 54, 93  
floor tile, 10, 15, 48, 86, 115, 116, 124. (see resilient floor coverings)

## G

GAC, 14, 17, 27, 28, 29, 30, 31, 32, 33, 34, 37, 41, 42, 43, 44, 47, 49, 51, 52, 53, 54, 55  
General Abatement Contractor, 14, 16, 17, 28  
glovebags, 38, 53, 54, 68, 91, 99

## H

handling, 5, 20, 36, 46, 50, 51, 68, 69, 70, 114  
HEPA vacuuming, 8, 54

## I

independence requirement, 90  
independent, 7, 27, 30, 43, 44, 51, 55, 94  
    air monitoring specialist, 43  
    project manager, 29  
initial training, 18, 23  
inspection and reinspection, 62, 72  
inspections, 2, 21, 22, 27, 31, 33, 43, 56, 62, 73, 79, 80, 82, 84, 93, 94  
inspector, 3, 27, 28, 55, 58, 59, 60, 61, 62, 72, 76, 77, 78, 80, 81, 82, 83, 84, 85, 94  
insulating materials, 10, 86, 88

## L

large contiguous facility complexes, 31, 33  
linoleum. (see sheet vinyl and resilient floor coverings)  
local education agency responsibilities, 70, 71, 75  
Local Education Agency Responsibilities, 56

## M

MAAL, 14, 51, 52, 53. (see maximum allowable asbestos level)  
major fiber release episode, 69  
major fiber release episode in schools, 69  
management planner, 19, 68, 71, 73, 85, 89  
management plans, 7, 56, 57, 63, 71, 74, 84  
manufacturing, 7, 8, 86, 104  
maximum allowable asbestos level, 51, 52, 90, 100  
maximum allowable asbestos level (MAAL), 52, 90, 100  
mills, 86

## N

notification, 25, 29, 30, 31, 32, 41, 50, 57, 75, 90, 124, 125  
    notices, 29, 30, 31, 48, 50  
    notification procedures, 25  
notification procedures  
    asbestos abatement, 25  
    asbestos abatement, 3, 8, 9, 26, 28, 29, 30, 31, 32, 34, 43, 48, 50, 79, 90, 98, 123  
    demolition, 5, 9, 27, 28, 30, 31, 32, 55, 80

## O

operations and maintenance, 9, 10, 56, 64, 68, 71, 73, 74, 76

## P

PCM, 15, 44, 45, 46, 52, 53, 66, 67. (see phase contrast microscopy)  
permit, 30, 31, 33, 34, 35, 38, 50  
permits, 30, 31, 33, 34, 35, 93, 107, 110, 112  
phase contrast microscopy, 8, 46, 65, 66  
phase contrast microscopy (PCM), 46, 65, 66  
point counting, 27  
project design, 9, 24, 25, 29, 30, 89, 90  
project designer, 19, 25, 26, 29, 30, 89  
project management  
    project manager, 29, 30, 34, 35, 90

waiver requests, 29  
Project Management  
Project Manager, 26  
project manager, 29, 30, 34, 35, 55, 90  
project managers  
independence requirement, 90,  
91  
project modification, 34  
public access, 2, 16, 27, 29, 31, 33, 34, 35,  
36, 38, 39, 40, 41, 43, 46, 47, 49, 50, 51,  
52, 53, 55, 79, 80, 81, 82, 92, 100  
public and commercial building, 9, 27, 28,  
29, 89, 93

## R

reciprocity, 24  
recordkeeping, 56, 85  
refresher training, 18, 23  
reinspection, 56, 57, 58, 59, 60, 62, 63, 71,  
72, 73, 74, 75  
renovation, 9, 10, 27, 80, 94, 98, 99  
resilient floor covering, 4, 103, 104, 105,  
108, 109, 112, 114, 116, 121, 124  
resilient floor coverings, 4, 104, 114, 123,  
124  
training course outline, 123  
resilient floor tile, 10, 116. (see resilient  
floor coverings)  
response actions, 7, 10, 56, 63, 64, 65, 69,  
72, 73, 74, 75, 84  
roadway, 86  
roadways, 10, 86  
roofing materials  
asphaltic, 49, 124  
transite (asbestos cement), 48

## S

sample analysis, 12, 61, 82, 124  
sampling, 22, 27, 35, 44, 56, 59, 60, 65, 72,  
76, 77, 78, 80, 82, 84, 85, 93, 124  
air monitoring, 2  
bulk, 58, 59, 60, 61, 62, 72, 73,  
80, 81, 82, 124  
school requirements, 51, 56, 74, 78  
analysis, 27, 45, 46, 52, 53, 58,  
59, 61, 62, 65, 73, 75, 80, 82, 84

assessment, 27, 30, 57, 59, 60,  
62, 63, 72, 73, 79, 80, 82, 83, 84  
exclusions, 58, 62, 76, 84  
inspection and reinspection, 62  
local education agency  
responsibilities, 70, 71, 75  
major fiber release episode, 69  
management plans, 7, 56, 57, 63,  
71, 74, 84  
operations and maintenance, 9,  
10, 56, 64, 67, 68, 71, 73, 74, 76  
recordkeeping, 56, 75, 84, 85,  
125  
response actions, 7, 10, 43, 56,  
63, 64, 65, 69, 72, 73, 74, 75, 84  
sampling, 27, 44, 56, 58, 59, 60,  
61, 65, 72, 76, 77, 78, 80, 82, 84,  
85, 124  
training and periodic  
surveillance, 69  
warning labels, 47, 57

## School Requirements

Local Education Agency  
Responsibilities, 56

sheet vinyl flooring, 11, 48  
single family residential dwelling, 11  
single family residential dwellings, 11  
single-family residential dwellings, 34  
Small Scale Projects, 98  
soil, 39, 49  
spill, 4, 50, 51, 52, 53  
spill response, 49, 50, 52, 53  
major fiber release episode, 69  
requirements for major asbestos  
spills, 50  
spraying, 87, 88, 108, 109, 110  
state building requirements  
analysis, 80  
assessment, 79  
exclusion, 78, 80, 82, 84, 85  
inspections, 76, 77, 78, 79, 80,  
82, 84, 85  
state agency responsibilities, 79,  
80, 82  
State Building Requirements, 79  
structurally unsound buildings, 32

supervisor, 17, 24, 25, 28, 48, 50, 55, 89,  
123

## T

TEM, 12, 15, 44, 45, 52, 53, 65, 66. (see  
transmission electron microscopy)  
temporary storage of ACWM, 47  
transite, 48  
transmission electron microscopy, 12, 45,  
52, 53, 65  
trigger levels, 12, 27, 28, 30, 33, 34, 35, 36,  
38, 39, 40, 41, 43, 44, 46, 47, 48, 49, 50,  
51, 53, 55, 66, 79, 80, 81, 82, 98

## V

variances, 24, 42, 55  
VAT, 10, 15. (vinyl asbestos tile)  
vinyl asbestos tile, 10  
visible emissions, 2, 6, 12, 47, 86, 87, 88

## W

waiver  
notification requirements, 29  
project manager, 34  
Waiver  
Project Manager, 26  
warning labels, 47, 57, 76  
waste material, 3, 12, 13, 46, 47, 49, 54, 86,  
91  
handling, 39, 49, 50, 51, 54  
waste shipment procedures, 47  
waste water, 38, 47  
wastewater, 38, 47  
wet wiping, 42, 54  
wetting, 12, 42, 54, 104, 110, 111, 116, 118,  
119  
worker, 4, 5, 6, 8, 10, 11, 16, 24, 28, 38, 39,  
48, 50, 56, 57, 65, 73, 74, 89, 91, 99, 105,  
123, 125