

CHAPTER 4620
DEPARTMENT OF HEALTH
CLEAN INDOOR AIR

4620 3000 PURPOSE AND SCOPE	4620 3900 APPLICATION
4620 3100 DEFINITIONS	4620 4000 DEFINITIONS
4620 3200 LICENSING REQUIREMENTS FOR ASBESTOS ABATEMENT CONTRACTORS INTENDING TO PERFORM ASBESTOS RELATED WORK.	4620 4100 RESURFACING MACHINES
4620 3300 CERTIFICATION OF ASBESTOS ABATEMENT SITE SUPERVISORS AND ASBESTOS ABATEMENT WORKERS	4620 4200 APPLICATIONS FOR CERTIFICATE
4620 3400 ASBESTOS ABATEMENT CONTRACTOR RESPONSIBILITIES	4620 4300 DOCUMENTATION OF AIR QUALITY CONDITIONS
4620 3500 STANDARDS FOR ASBESTOS RELATED WORK.	4620 4400 MAINTENANCE OF AIR QUALITY CONDITIONS
4620 3600 ENFORCEMENT ACTIONS	4620 4500 MEASUREMENT OF AIR QUALITY CONDITIONS
4620 3700 REQUIREMENTS FOR MINNESOTA APPROVAL OF ASBESTOS ABATEMENT TRAINING COURSES	4620 4600 FAILURE TO MAINTAIN AIR QUALITY
	4620 4700 OTHER INTERNAL COMBUSTION ENGINES
	4620 4800 REVOCATION OR SUSPENSION OF APPROVAL, REINSTATEMENT

4620.3000 PURPOSE AND SCOPE.

The purpose of parts 4620.3000 to 4620.3700 is to protect persons from asbestos exposure during and after asbestos related work, by requiring minimum qualifications for individuals engaged in asbestos related work and by assuring that prescribed procedures are followed for asbestos related work.

Parts 4620.3000 to 4620.3700 regulate asbestos related work involving friable asbestos containing material that contains greater than one percent asbestos by weight in quantities greater than or equal to 260 linear feet on pipes or 160 square feet on other facility components.

All asbestos related work must be performed by licensed asbestos abatement contractors employing certified asbestos abatement site supervisors and certified asbestos abatement workers.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

4620.3100 DEFINITIONS.

Subpart 1. Scope. For the purpose of this chapter, the following terms have the meanings given them.

Subp. 2. Abatement area. "Abatement area" means an area established by the asbestos abatement contractor, restricted to abatement personnel only, where airborne concentrations of asbestos exceed or can reasonably be expected to exceed 0.01 fibers per cubic centimeter (f/cc) or alternative indoor air standard established in accordance with these rules.

Subp. 3. Asbestos. "Asbestos" means the asbestiform varieties of chrysotile (serpentine), crocidolite (riebeckite), amosite (cummingtonite grunerite), anthophyllite, tremolite, and actinolite.

Subp. 4. Asbestos abatement contractor. "Asbestos abatement contractor" means an employer who conducts asbestos related work and includes employers who perform in house asbestos related work using their own employees.

Subp. 5. Asbestos abatement plan. "Asbestos abatement plan" means a written plan which describes the equipment and procedures that will be used throughout the asbestos abatement project. Requirements for the plan are described in part 4620.3500, subpart 3, item A.

Subp. 6. Asbestos abatement worker. "Asbestos abatement worker" means any employee who conducts asbestos related work.

Subp. 7. **Asbestos containing material (ACM).** "Asbestos containing material (ACM)" means material that contains more than one percent asbestos by weight.

Subp. 8. **Asbestos related work.** "Asbestos related work" means the enclosure, removal, or encapsulation of friable asbestos containing material in quantities greater than or equal to 260 linear feet on pipes or 160 square feet on other facility components in one facility.

A. To determine whether planned enclosure, removal, or encapsulation operations constitute "asbestos related work," the contracting entity must predict the additive quantity of friable asbestos containing materials to be enclosed, removed, or encapsulated in the facility over the maximum period of time for which a prediction can be made, not to exceed one year.

B. To determine whether emergency enclosure, removal, or encapsulation operations constitute "asbestos related work," the contracting entity must estimate the quantity of friable asbestos containing materials to be enclosed, removed, or encapsulated as a result of the sudden, unexpected event that necessitated the operation.

Subp. 9. **Clearance air level.** "Clearance air level" means the maximum permissible concentration of fibers remaining in the air in the abatement area following completion of asbestos related work which must not exceed 0.01 fibers per cubic centimeter (f/cc) of air as analyzed by phase contrast microscopy, counting fibers with a length to width ratio equal to or greater than 3:1 and greater than five microns in length, or the alternative clearance air level established pursuant to part 4620.3500, subpart 3, item D.

Subp. 10. **Clearance air sampling.** "Clearance air sampling" means the air sampling method used to document the concentration of fibers remaining in the air in the abatement area following completion of asbestos related work.

Subp. 11. **Commissioner.** "Commissioner" means the commissioner of health and the commissioner's designees.

Subp. 12. **Contingent EPA approval.** "Contingent EPA approval" means the Environmental Protection Agency (EPA) has reviewed the training course sponsor's written submission seeking EPA approval, found the materials to be acceptable, but has not yet conducted an on-site audit.

Subp. 13. **Contracting entity.** "Contracting entity" means a public or private body, board, natural person, corporation, partnership, proprietorship, joint venture, fund, authority, or similar entity that contracts with an employer or person to do asbestos related work for the benefit of the contracting entity.

Subp. 14. **Critical containment barriers.** "Critical containment barriers" means the barriers constructed to separate and isolate the abatement area from the rest of the building and the outdoors, including the barriers constructed over doors, windows, and air passageways.

Subp. 15. **Emergency demolition.** "Emergency demolition" means that the facility is being demolished under an order of a state or local governmental agency, because the facility is structurally unsound and in danger of imminent collapse.

Subp. 16. **Emergency renovation.** "Emergency renovation" means asbestos related work which was not planned but results from a sudden, unexpected event. This includes work required by nonroutine failures of equipment.

Subp. 17. **Employee.** "Employee" means a person who works directly or indirectly for an employer.

Subp. 18. **Employer.** "Employer" means an individual, body, board, corporation, partnership, proprietorship, joint venture, fund, authority, or similar entity directly or indirectly employing an employee. This term applies to private employers and to the state, its political subdivisions, and any boards, commissions, schools, institutions, or authorities created or recognized by them.

Subp. 19. Encapsulation. "Encapsulation" refers to a method of asbestos abatement that is sometimes chosen as an alternative to asbestos removal, and means the treatment of asbestos containing building materials with a sealant material that surrounds or embeds asbestos fibers in an adhesive matrix to prevent the release of fibers. A bridging encapsulant creates a membrane over the surface. A penetrating encapsulant penetrates the material and binds its components together.

Subp. 20. Enclosure. "Enclosure" refers to a method of asbestos abatement that is sometimes chosen as an alternative to asbestos removal, and means construction of permanent, airtight, impermeable walls, ceilings, and floors around asbestos containing material to prevent the release of asbestos fibers into the air.

Subp. 21. Friable asbestos material. "Friable asbestos material" means any material containing more than one percent asbestos by weight that hand pressure can crumble, pulverize, or reduce to powder when dry.

Subp. 22. Full EPA approval. "Full EPA approval" means the Environmental Protection Agency (EPA) has reviewed and found acceptable the training course sponsor's written submission for EPA approval, conducted an onsite audit and determined that the training course meets or exceeds the training requirements of the EPA Model Accreditation Plan.

Subp. 23. Glove bag. "Glove bag" means a bag, fitted with arms, through which limited types of asbestos related work may be performed, as allowed in part 4620.3500, subpart 4.

Subp. 24. High efficiency particulate air (HEPA) filter. "High efficiency particulate air (HEPA) filter" means a filter capable of trapping and retaining at least 99.97 percent of all monodispersed particles 0.3 microns in diameter or larger.

Subp. 25. Industrial facility. "Industrial facility" means a facility in an industry classified in the Standard Industrial Classification Manual, 1972 edition, published by the Office of Management and Budget, within Major Groups 20 to 39, 46, and 49. This document is not subject to frequent change and is incorporated by reference and is available at the State Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota 55155.

Subp. 26. Minnesota approved. "Minnesota approved" means a training course that meets the requirements for approval described in part 4620.3700.

Subp. 27. Occupied area immediately adjacent to an abatement area. "Occupied area immediately adjacent to an abatement area" is a designation used during an asbestos related work project and means an indoor space which meets all of the following criteria.

A. The space is not considered part of the abatement area.

B. The space shares a wall, floor, or ceiling with the temporary barriers constructed to enclose the abatement area or shares a window, door, or similar opening to a room temporarily considered the abatement area.

C. The space is occupied by persons not involved in asbestos related work.

Subp. 28. Renovation. "Renovation" means altering in any way one or more facility components. In asbestos related work renovation includes the enclosure, removal, or encapsulation of friable asbestos containing material.

Subp. 29. Responsible individual. "Responsible individual" means one who has the authority to represent the company in all matters related to the asbestos abatement contractor license.

Subp. 30. Site supervisor. "Site supervisor" means one who meets the OSHA definition of a competent person and has the authority to act as the agent of the asbestos abatement contractor at the work site.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

4620.3200 LICENSING REQUIREMENTS FOR ASBESTOS ABATEMENT CONTRACTORS INTENDING TO PERFORM ASBESTOS RELATED WORK.

Subpart 1. **License required.** On and after January 1, 1989, an asbestos abatement contractor who performs asbestos related work must be licensed as a Minnesota asbestos abatement contractor. This includes employers who perform in house asbestos related work using their own employees.

Subp. 2. **Initial application for license.** An applicant for an initial asbestos abatement contractor license shall submit the following:

A. A properly completed application on a form provided by the commissioner.

B. A \$100 nonrefundable application fee, in the form of a check, payable to the Treasurer, State of Minnesota.

C. The name, address, and social security number of the responsible individual who has taken the required training as specified under part 4620.3700 and is applying for a license on behalf of the asbestos abatement contractor.

D. Evidence that the responsible individual who is applying has successfully completed a Minnesota approved initial training course for asbestos abatement contractors and site supervisors that meets the following requirements:

(1) for purposes of license applications submitted before January 1, 1989, a training course taken between June 1, 1987 and December 31, 1988, is considered Minnesota approved if it has full or contingent EPA approval, and the responsible individual completed the course within one year of application; and

(2) for purposes of license applications submitted on or after January 1, 1989, a training course must meet the additional criteria for training courses in part 4620.3700 to be Minnesota approved.

E. A list of the other states in which the asbestos abatement contractor is licensed or certified for asbestos abatement work.

F. Copies of any asbestos related citations or notices of violation issued by Minnesota Occupational Safety and Health Review Board, the Minnesota Pollution Control Agency, the federal Occupational Safety and Health Administration, or the federal Environmental Protection Agency, within two years before the date of application; or similar citations received by the asbestos abatement contractor for work performed in other states, and a description of corrective actions taken.

G. Evidence of workers' compensation insurance coverage.

H. A statement that the asbestos abatement contractor does not owe outstanding Minnesota tax obligations.

I. The social security number of the responsible individual and the asbestos abatement contractor's Minnesota business identification number.

Subp. 3. **Denial of license application.** An application for license may be denied for any of the following reasons:

A. failure of the applicant to complete the application;

B. failure of the applicant to submit the application with the required fee; or

C. failure of the applicant to meet the qualifications required by the Asbestos Abatement Act, Minnesota Statutes, sections 326.70 to 326.82, and parts 4620.3000 to 4620.3700, and state law relating to delinquent tax accounts.

An applicant shall be notified in writing of the denial and the reasons for the denial. A person who resubmits an initial application is not required to pay a second fee.

Subp. 4. **Licensure.** An applicant who meets the requirements in subpart 2,

shall be issued a written Minnesota asbestos abatement contractor license. For licenses issued on or after January 1, 1989, the date of issuance is the date the applicant successfully completes the training requirements in subpart 2, item D. The following information shall appear on the front of the license:

- A. the employer's name and address;
- B. the name of the responsible individual;
- C. the date the license is issued;
- D. the date the license expires; and
- E. the signature of the commissioner.

Copies certified by the commissioner shall be issued upon request.

Subp. 5. Annual license renewal. The license is effective for one year unless the commissioner revokes or suspends the license. Renewal licenses shall be issued to qualified applicants.

A. The commissioner may renew a license if the license holder submits a completed, approvable renewal application at least 30 but not more than 60 days prior to the expiration date of the existing license.

B. Renewal applications will only be accepted from the responsible individual who currently holds the license on behalf of the company. License holders applying for renewal of a license shall submit each of the following items:

(1) a properly completed renewal application on a form provided by the commissioner;

(2) a \$100 nonrefundable renewal application fee in the form of a check, payable to the Treasurer, State of Minnesota; and

(3) evidence that the responsible individual has attended and successfully completed a Minnesota approved annual refresher training course for asbestos abatement contractors. The criteria for Minnesota approval of training courses are described under part 4620.3700.

Subp. 6. Denial of renewal application. An application for license renewal may be denied for the reasons stated under subpart 3. An applicant shall be notified in writing of the denial and the reasons for the denial.

Subp. 7. Retention of license in event of change in responsible person or contractor ownership.

A. If the responsible individual for the license changes, the asbestos abatement contractor must notify the commissioner within two days of the change and file a properly completed application form, as described under subpart 1, with the commissioner within 30 days of the change. The asbestos abatement contractor will then receive a sticker from the commissioner reflecting the change, and may retain the same numbered license until the expiration date.

B. If the contracting firm licensed by the state is sold in whole or in part, the purchaser must notify the commissioner within two days of the sale and file a properly completed application form with the commissioner within 30 days of the sale. The purchaser will then receive a sticker from the commissioner reflecting any changes, and may retain the same numbered license until the expiration date.

Subp. 8. Procedures for obtaining duplicate license. The commissioner may issue a duplicate license to replace a lost, destroyed, or mutilated license. The responsible individual shall submit a properly completed application for a duplicate license on a form provided by the commissioner. A duplicate license must have "duplicate" stamped on its face and must bear the same number and expiration date as the original license.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

4620.3300 CERTIFICATION OF ASBESTOS ABATEMENT SITE SUPERVISORS AND ASBESTOS ABATEMENT WORKERS.

Subpart 1. Certification of supervisors and workers required. On and after January 1, 1989, an employee who performs asbestos related work must be certified as an asbestos abatement site supervisor or asbestos abatement worker. Site supervisors and workers who perform asbestos related work shall be issued a written Minnesota asbestos abatement site supervisor or worker certificate with the person's name, the date issued, the date of expiration, and the signature of the commissioner appearing on the front of the certificate. The certified asbestos abatement site supervisor or worker must have the certificate readily available at the work site for inspection by the commissioner's designees.

Subp. 2. Initial application for site supervisor or worker certification.

A. An applicant for initial certification as an asbestos abatement site supervisor or worker must submit the following:

(1) a properly completed application on a form provided by the commissioner;

(2) a nonrefundable application fee of \$50 in the form of a check, payable to the Treasurer, State of Minnesota; and

(3) evidence of attendance and successful completion of a Minnesota approved initial training course that meets the following requirements:

(a) site supervisors must show evidence of attendance and successful completion of a Minnesota approved initial training course for contractors and site supervisors;

(b) workers must show evidence of attendance and successful completion of a Minnesota approved initial training course for workers;

(c) for purposes of applications submitted before January 1, 1989, a training course taken between June 1, 1987 and December 31, 1988, is considered Minnesota approved if it has full or contingent EPA approval, and the site supervisor or worker completed the course within one year of application; and

(d) for purposes of applications submitted on or after January 1, 1989, a training course must meet the additional criteria for training courses in part 4620.3700 to be Minnesota approved.

B. An applicant who meets the requirements of this subpart and subpart 3 shall be issued a written Minnesota asbestos abatement site supervisor or worker certificate. For certificates issued on or after January 1, 1989, the date of issuance of the certificate is the date the applicant successfully completes the Minnesota approved training course.

Subp. 3. Additional training or experience requirements. On and after January 1, 1989, to be eligible for certification as a site supervisor or worker, a person applying for certification must submit the information described in subpart 2 and also show evidence of completion of one of the following:

A. two years of attendance in an apprenticeship program within the construction industry which is either approved by the state of Minnesota, Department of Labor and Industry, Division of Voluntary Apprenticeship, or registered with the United States Department of Labor, Bureau of Apprenticeship and Training;

B. successful completion of a construction industry vocational technical program of not less than 18 months; or

C. work experience of at least 2,000 hours within the commercial or industrial building construction industry, verified in a notarized statement detailing the hours worked, provided by either the employer or the labor organization involved.

Subp. 4. Denial of site supervisor or worker certification application. An appli-

cation for site supervisor or worker certification may be denied for any of the reasons for denying a license, listed in part 4620.3200, subpart 3. An applicant shall be notified in writing of the denial and the reasons for the denial. A person who resubmits an initial application is not required to pay a second fee.

Subp. 5. Annual renewal of certification. The certificate is effective for one year unless the commissioner suspends or revokes it. Renewal certificates shall be issued to qualified applicants.

A. The commissioner may renew a certificate if the certificate holder submits a completed, approvable renewal application at least 30 but not more than 60 days before expiration of the existing certificate.

Failure to submit the properly completed application materials at least 30 days before the certificate expiration date may result in lapse of the certificate.

B. Certificate holders applying for renewal of the license shall submit the following:

(1) a properly completed renewal application on a form provided by the commissioner;

(2) a nonrefundable \$50 renewal application fee in the form of a check, payable to the Treasurer, State of Minnesota; and

(3) for site supervisors, evidence of attendance and successful completion of a Minnesota approved refresher training course for contractors and site supervisors; and for workers, evidence and successful completion of a Minnesota approved refresher training course for workers. The criteria for Minnesota approved refresher training courses are described in part 4620.3700.

C. An application for renewal of certification may be denied for any of the reasons for denying an asbestos abatement contractor license in part 4620.3200, subpart 3. The applicant shall be notified in writing of the denial and the reasons for the denial.

Subp. 6. Procedures for obtaining duplicate site supervisor or worker certificate. The commissioner may issue a duplicate certificate to replace a lost, destroyed, or mutilated certificate. The certificate holder shall submit a properly completed application for a duplicate certificate on a form provided by the commissioner. A duplicate certificate shall have "duplicate" stamped on the face and shall bear the same number and expiration date as the original certificate.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

4620.3400 ASBESTOS ABATEMENT CONTRACTOR RESPONSIBILITIES.

Subpart 1. Advance notification and payment of one percent project fee before beginning asbestos related work.

A. At least 20 calendar days before beginning asbestos related demolition projects and five calendar days before beginning asbestos related renovation projects, the licensed asbestos abatement contractor must submit to the commissioner the following:

(1) a properly completed Notification of Intent to Perform an Asbestos Abatement Project Form;

(2) a check in the amount of the project fee described under item C, payable to the Treasurer, State of Minnesota; and

(3) a copy of a signed summary of the costs of the asbestos abatement contract.

Once the asbestos abatement contractor pays the fee required under this subpart, the commissioner shall issue a project permit to the asbestos abatement contractor.

For emergency renovation or demolition projects, notification and fee requirements are described in item E.

B. If at any time during the asbestos related work the information reported on the notification form changes, an amended notification form must be filed with the commissioner. The amended notification form is a properly completed notification form with the changes from the original version highlighted. An amended notification form must be filed as soon as possible, but no later than the end of the project.

C. For each asbestos related work project, the licensed asbestos abatement contractor shall pay to the department a project fee equal to one percent of the total cost of the asbestos project. The total cost of the asbestos project includes the cost of abatement area preparation, decontamination, installations, enclosures, alterations, removal abatement, and repairs; including, for example, wages, materials, waste disposal, associated environmental monitoring, profit, performance bond, insurance, and administrative overhead. The total cost of the asbestos project does not include the cost of reinsulation.

If the final invoice amount charged to the contracting entity for the asbestos related work exceeds the total cost of the asbestos project previously reported on the notification form, additional fee payment in the amount of one percent of that difference must be submitted to the department. Within five working days after submission of the final invoice to the contracting entity, the asbestos abatement contractor must submit the additional fee, evidence of the final invoice amount, and an amended notification form. The department shall issue a refund in the event of an overpayment of the project fee.

D. In the special case of a company conducting in house asbestos related work, where costs may be difficult to itemize for fee calculation, the total cost of the asbestos related work project may be estimated and the fee paid as follows:

(1) The responsible individual shall prepare an estimate of the cost of the asbestos related work project. The estimate must include the cost of work area preparation, decontamination, installations, enclosures, alterations, removal abatement, repairs, wages, materials, waste disposal, associated environmental monitoring, administrative overhead, and a contingency figure that is 20 percent of the total of the above items. The company shall pay a project fee equal to one percent of the estimated total cost. The total cost of the asbestos project does not include the cost of reinsulation.

The initial estimate of the cost of the asbestos related work must include all planned asbestos related work performed in one facility during a period of one year or less. After the expiration of the designated project time period, if the final cost of all asbestos related work completed during that time period exceeds the estimate of the total cost previously reported on the notification form, additional fee payment in the amount of one percent of that difference must be submitted to the department within five working days after the determination of the final asbestos related work cost. The responsible individual must submit the additional fee, evidence of final cost determination, and an amended notification form. The department shall issue a refund in the event of an overpayment of the project fee.

(2) At least 20 days before beginning asbestos related demolition work, and at least five days before beginning asbestos related renovation work, the asbestos abatement contractor must submit the following:

(a) a check in the amount of the project fee, payable to the Treasurer, State of Minnesota;

(b) a copy of the estimate of the total cost of the asbestos project; and

(c) a copy of the completed notification form.

E. For emergency demolition projects, the asbestos abatement contractor must submit to the commissioner a completed Notification of Intent to Perform Asbestos Abatement Project form, project permit fee, and the

condemnation order as soon as possible before demolition begins. For emergency renovation projects, the asbestos abatement contractor must submit to the commissioner a completed Notification of Intent to Perform Asbestos Abatement Project form and project permit fee as soon as possible before renovation begins. Certain emergency renovation work in industrial facilities must initiate in non-standard business hours and therefore must be reported during the next day state offices are open.

If the final invoice amount charged to the contracting entity for the emergency demolition or emergency renovation project exceeds the total cost of the asbestos project reported on the notification form, additional fee payment is due as described under item C.

Subp. 2. Posting the work site. The asbestos abatement contractor shall post in a conspicuous place outside of the abatement area a copy of the sign provided by the commissioner which states in letters four or more inches high: LICENSED BY THE STATE OF MINNESOTA FOR ASBESTOS WORK. A copy of the project permit issued under subpart 1, item A, must be posted in a conspicuous place at the worksite upon receipt from the commissioner. The actual license of the asbestos abatement contractor or a copy certified by the commissioner must be readily available for inspection.

Subp. 3. Records. The following records must be compiled for each asbestos related work project and must be readily available for review by the commissioner. These records must be retained by the asbestos abatement contractor for 30 years after completion of the project.

A. A daily sign in and sign out log that identifies individuals at the abatement area by name, certificate number, and length of time in the abatement area.

B. A copy of the detailed asbestos abatement plan for the work site, developed in accordance with part 4620.3500, subpart 3, item A.

C. Records of all on-site air monitoring required under part 4620.3500, subpart 4, item F, including calibrations, sampling methods, volume flow rate, time sampled, and analytical results.

D. A listing of each of the other employers on the site who have been informed of the nature of the asbestos abatement contractor's asbestos related work, according to Code of Federal Regulations, title 29, section 1926.58(d).

Subp. 4. Information provided to the contracting entity. At the time a bid for asbestos related work is submitted, the asbestos abatement contractor shall provide the following information to the contracting entity:

A. evidence that the asbestos abatement contractor holds a current Minnesota asbestos abatement contractor license;

B. a copy of the asbestos abatement plan that meets the requirements of part 4620.3500, subpart 4, item A; and

C. a copy of a statement provided by the commissioner regarding bonding and liability insurance.

Subp. 5. Use of qualified personnel.

A. On and after January 1, 1989, the asbestos abatement contractor shall employ only workers and site supervisors with valid, current Minnesota certificates to conduct asbestos related work. The asbestos abatement contractor shall ensure that a current certificate plus current photo identification, such as a driver's license or other dated identification card, of each employee engaged in asbestos related work at the work site, is available at the work site to enable the commissioner to verify the identity and certification of each employee at the work site.

B. On and after January 1, 1989, the asbestos abatement contractor shall ensure that a certified site supervisor is present at the work site during all work shifts of the asbestos abatement workers.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

4620.3500 STANDARDS FOR ASBESTOS RELATED WORK.

Subpart 1. Applicability. This part applies to all asbestos related work except certain defined areas of industrial facilities.

A. When the responsible individual of an industrial facility, as defined in part 4620.3100, subpart 25, has demonstrated to the commissioner through reliable environmental sampling data that the background level of dust or nonasbestos fibers in a defined area of that facility in which asbestos related work is to be performed exceeds 0.01 f/cc and that the establishment of an alternative indoor air standard and an alternative clearance air level under the provisions in subpart 3, items D and E, are not technically feasible, then this defined area of the industrial facility is known as a high dust area and is exempt from the provisions of subparts 2 and 3, and exposure limits shall be controlled by Code of Federal Regulations, title 29, sections 1910.1001 and 1926.58.

B. Asbestos related work involving the enclosure, removal, or encapsulation of asbestos containing material that is located outside the foundation, curtain walls, or roof of a facility and is above grade is exempt from the provisions of this part and is instead controlled by Code of Federal Regulations, title 29, sections 1910.1001 and 1926.58.

Subp. 2. Indoor air standards. The following minimum air standards for asbestos related work do not replace or supersede more stringent standards or contractual agreements, whenever applicable.

A. Fibers remaining in the air in the abatement area following the completion of an asbestos abatement project must not exceed 0.01 fibers per cubic centimeter (f/cc) of air as analyzed by phase contrast microscopy, counting fibers with a length to width ratio equal to or greater than 3:1 and greater than five microns in length or the alternative clearance air level established pursuant to subpart 3, item D. This is referred to as the clearance air level. Sampling and analysis must be conducted according to subpart 3 and subpart 4, item F, subitem (3).

B. Where asbestos related work is conducted in a building occupied by persons not involved in asbestos related work, asbestos levels measured in indoor air outside the abatement area during the asbestos related work must not exceed the clearance air level.

Except as provided in item C, if, during the asbestos related work, the fiber concentration in air measured outside an abatement area exceeds the clearance air level, the asbestos abatement contractor shall evacuate any occupied area immediately adjacent to the abatement area and any other areas outside the abatement area where fiber levels exceed the limit stated in this paragraph, to protect members of the public and nonabatement personnel. However, in an industrial facility where nonabatement personnel are essential for maintaining safe operation of processes located within the evacuation affected area, the procedures in Code of Federal Regulations, title 29, sections 1910.1001 and 1926.58, shall apply. Evacuated areas shall not be reoccupied until corrective measures have been taken and documented, and each of five air samples collected in accordance with subpart 3 show that fiber levels no longer exceed the clearance air level.

C. If the asbestos abatement contractor has good reason to believe that elevated fiber levels are the result of nonasbestos dust in the air, the asbestos abatement contractor or employer may delay evacuation of the occupied areas in question, provided that the following actions are taken immediately:

(1) the asbestos abatement contractor must repeat analysis of samples analyzed in item B to distinguish between asbestos and nonasbestos fibers greater than five microns in length with an aspect ratio of 3:1; and

(2) the repeat analysis under this item must meet the requirements of "Mandatory Transmission Electron Microscopy Method," Code of Federal Regulations, title 40, part 763, subpart E, appendix A, section II, Parts A, E, F, H, I, and J, as provided by the Federal Register, volume 52, pages 41857 to 41870, October 30, 1987, and as qualified in this subitem.

(a) Part A is amended as follows:

i. The definition of "aspect ratio" is amended to read:

"3. 'Aspect Ratio' — a ratio of the length to the width of a particle. Minimum aspect ratio as defined by this method is equal to or greater than 3:1."

ii. The definition of "fiber" is amended to read:

"9. 'Fiber' — a structure greater than or equal to five microns in length with an aspect ratio (length to width) of 3:1 or greater and having substantially parallel sides."

(b) Part F is amended as follows:

i. Paragraph 9(a) is amended to read:

"9. Recording Rules.

a. Any continuous grouping of particles in which an asbestos fiber with an aspect ratio greater than or equal to 3:1 and a length greater than or equal to 5.0 microns is detected shall be recorded on the count sheet. These will be designated asbestos structures and will be classified as fibers, bundles, clusters, or matrices. Record as individual fibers any contiguous grouping having 0, 1, or 2 definable intersections. Groupings having more than 2 intersections are to be described as cluster or matrix. An intersection is a nonparallel touching or crossing of fibers, with the projection having an aspect ratio of 3:1 or greater. See the following Figure 2:"

ii. Paragraph 9(a), figure 2, the portion entitled "DO NOT COUNT AS STRUCTURES," is amended by changing the aspect ratio from "5:1" to "3:1" and the micrometer length from "0.5" to "5.0".

iii. Paragraph 9(a)(i) is amended to read:

"i. Fiber. A structure having minimum length greater than or equal to 5 microns and an aspect ratio (length to width) of 3:1 or greater and substantially parallel sides. Note the appearance of the end of the fiber, i.e., whether it is flat, rounded, or dovetailed."

iv. Paragraph 10(a) is amended to read:

"a. Fiber. A structure having minimum length greater than or equal to 5 microns and an aspect ratio (length to width) of 3:1 or greater and substantially parallel sides. Note the appearance of the end of the fiber, i.e., whether it is flat, rounded, or dovetailed."

(3) If any of the analysis results by transmission electron microscopy show that the asbestos air concentration exceeds 0.01 f/cc of air, counting fibers with a length to width ratio equal to or greater than 3:1 and greater than five microns in length, the asbestos abatement contractor shall evacuate the occupied area in question to protect members of the public and nonabatement personnel. However, in an industrial facility where nonabatement personnel are essential for maintaining safe operation of processes located within the evacuation affected areas, the procedures in Code of Federal Regulations, title 29, sections 1910.1001 and 1926.58, shall apply. Evacuated areas shall not be reoccupied until corrective measures have been taken and documented, and each of five air samples collected in each evacuated area, in accordance with subpart 3, items A, B, and C, show that fiber levels no longer exceed the 0.01 f/cc limit.

D. Before beginning asbestos related work, if the asbestos abatement contractor has good reason to believe that asbestos, or fiber, levels in the air entering the abatement area from outdoors or from other parts of the building outside of the abatement area exceed 0.01 f/cc, the asbestos abatement contractor may

establish an alternative indoor air standard and an alternative clearance air level, provided that the requirements prescribed under subpart 3, items A, D, and E, are met.

Subp. 3. General requirements for sampling and analysis. All air monitoring shall meet the following minimum criteria. These criteria do not replace or supersede more stringent standards or contractual agreements.

A. Air sampling must be conducted under the direction or control of a certified industrial hygienist or an individual who has successfully completed the National Institute for Occupational Safety and Health (NIOSH), course number 582, entitled Sampling and Identification of Airborne Asbestos, or another suitable course as determined by the commissioner.

B. When air sample analysis is by phase contrast microscopy, the following shall apply:

(1) Sampled air volumes must be sufficient to accurately determine fiber concentrations to 0.01 f/cc.

(2) For each sample, either a minimum volume of 2,000 liters shall be collected, or an alternative volume shall be collected according to the following guidelines.

When a sample with a volume lower than 2,000 liters is collected, it may be necessary to count more fields than the 100 microscope field maximum which is specified in NIOSH method 7400. The maximum number of fields to count is determined by dividing 2,000 liters by the volume filtered and multiplying the result by 100 fields. Additional segments of the filter will need to be used. If the cumulative fiber count reaches 100 fibers before the maximum number of fields have been counted, the analysis stops, and the concentration is calculated based on the number of fibers and the number of fields which have been counted. If the cumulative fiber count has not reached 100 fibers before the calculated maximum number of fields has been counted, the analysis stops and the concentration is calculated based on the number of fibers and the number of fields which have been counted. Adherence to these guidelines ensures that fiber concentrations of 0.01 f/cc will be analyzed with an approximate theoretical precision of plus or minus 16 percent based on the Poisson distribution model.

(3) Sampling and analysis methods must comply with NIOSH Method 7400 entitled "Fibers" published in the NIOSH Manual of Analytical Methods, 3rd Edition, Second Supplement, August 1987; or equivalent methods. This document is not subject to frequent change and is incorporated by reference and available at the State Law Library, Ford Building, 117 University Avenue, Saint Paul, Minnesota 55155.

(4) Analysis shall be conducted by a laboratory considered proficient in asbestos analysis by the American Industrial Hygiene Association (AIHA) Proficiency Analytical Testing (PAT) Program for phase contrast microscopy.

C. Sample analysis shall be requested to be performed on a priority basis to ensure prompt reporting of results. Samples must be submitted for analysis on the day they are collected. The contract for sample analysis shall specify that the analysis results shall be available orally or in writing as soon as possible, and no later than 48 hours after submission.

D. To establish an alternative clearance air level to the 0.01 f/cc limit by phase contrast microscopy under subpart 2, item A, analysis shall be by transmission electron microscopy (TEM), and sampling and TEM analysis shall comply with the requirements of "Mandatory Interpretation of Transmission Electron Microscopy Results to Determine Completion of Response Actions," Code of Federal Regulations, title 40, part 763, appendix A, section IV, as provided by the Federal Register, volume 52, pages 41893 to 41897, October 30, 1987; or equivalent methods. In an industrial facility process area, an alternative

clearance air level may be established using either phase contrast microscopy or transmission electron microscopy provided that an alternative indoor air standard has been established for the area according to item E.

E. To establish an alternative indoor air standard to the 0.01 f/cc limit by phase contrast microscopy prescribed under subpart 2, item B, an average and range of airborne concentrations shall be determined by collecting simultaneously a minimum of five air samples and calculating the upper bound of the range defined by the 95 percent confidence interval from the average before any asbestos related work begins, using the sampling and phase contrast microscopy analysis methods of items A, B, and C. Sampling locations must be indoors, and within ten feet of the planned abatement area. Sampling locations must be selected to provide suitable data for comparison with air samples collected after the asbestos related work begins.

In an industrial facility process area, an alternative indoor air standard may be established using either phase contrast microscopy or transmission electron microscopy provided that, at least every three months, a minimum of five simultaneous air samples are collected and analyzed according to the requirements of subpart 2, item C, subitem (2), and the background level of asbestiform fibers versus nonasbestiform fibers is determined. The air samples must be representative of the air in the vicinity of the planned abatement area to which the indoor air standard is applied.

Subp. 4. Required procedures for asbestos related work. Asbestos related work must meet the following minimum criteria. The criteria do not replace or supersede more stringent standards or contractual agreements.

A. A written asbestos abatement plan must be prepared which describes the equipment and procedures to be used throughout the asbestos related work project. At a minimum, the asbestos abatement plan must contain the following information:

- (1) a physical description of the work area;
- (2) a description of the approximate amount of asbestos containing material to be removed, encapsulated, or enclosed;
- (3) a schedule for shutting down and locking out electric power and heating, ventilating, and air conditioning equipment to all work areas and sealing existing ventilation systems;
- (4) personnel hygiene procedures;
- (5) labeling procedures;
- (6) a description of personal protective equipment and clothing to be worn by employees;
- (7) a description of the local exhaust ventilation systems to be used;
- (8) a description of work practices to be observed by employees;
- (9) a description of the methods to be used to remove, encapsulate, and enclose asbestos containing material;
- (10) a description of the wetting agents, encapsulants, and sealants to be used;
- (11) a description of the air monitoring plan; and
- (12) a description of the method of transporting waste material.

B. Preparation of the work area must meet the following requirements:

- (1) Removal, enclosure, or encapsulation of asbestos containing material is a major operation for purposes of compliance with Code of Federal Regulations, title 29, section 1926.58, and must be done, where feasible in industrial facilities, in a negative pressure enclosure with a contiguous decontamination enclosure system. However, for the portion of an asbestos related project that includes removal of less than ten feet of pipe lagging or less than six square feet of asbestos containing material per room, the asbestos abatement contractor

may use, as an alternative, the glove bag or mini enclosure procedures in subpart 5. The commissioner may approve exceptions to the procedures specified in this subitem, on a case by case basis, where space limitations prohibit the construction of the enclosure, or where the construction of a negative pressure enclosure would create a greater hazard, for example where toxic gases are present in the area.

(2) All heating, ventilating, and air conditioning intake and exhaust openings in the abatement area and any seams in system components must be sealed with 6-mil polyethylene sheeting or comparable material and tape. All system filters that serve the abatement area must be replaced at the conclusion of the abatement project and disposed of as asbestos waste. The interior surfaces of ventilation system ductwork must be decontaminated whenever necessary.

All openings between the abatement area and uncontaminated areas, including windows, doorways, elevator openings, corridor entrances, drains, ducts, grills, grates, diffusers, and skylights, and all penetrations of the floors, walls, and ceilings, including penetrations around electrical conduits, telephone wires, water supply pipes, and drain pipes must be sealed with 6-mil polyethylene plastic or comparable material and tape.

(3) Surfaces in the abatement area which are to be in contact with the containment barriers must be precleaned, using HEPA filtered vacuuming and wet cleaning methods, before the barriers are constructed.

(4) All movable objects must be removed from the abatement area before abatement begins. When movable objects are contaminated or are suspected of being contaminated, they must be vacuumed with a HEPA vacuum and wet cleaned or disposed of as asbestos waste. Objects that cannot be removed from the abatement area must be covered with a 6-mil polyethylene plastic sheeting or comparable material that is securely taped to achieve an airtight seal around the object.

(5) Containment barriers must be constructed to separate and isolate the abatement area from the rest of the building and the outdoors, and to enclose the abatement area.

At a minimum, floor sheeting must consist of two layers of 6-mil polyethylene plastic sheeting or comparable material, must extend up side walls at least 12 inches, and must be sized to minimize seams. No seams shall be located at wall or floor joints.

At a minimum, wall sheeting must consist of 4-mil polyethylene plastic sheeting or comparable material, must extend beyond wall or floor joints at least 12 inches, and must be sized to minimize seams. No seams shall be located at wall or floor joints.

(6) A worker decontamination enclosure system must be provided, where feasible in industrial facilities, consisting of, at a minimum, a clean room, shower room, and equipment room, each separated from the other and from the work area by airlocks and accessible through doorways protected with two overlapping sheets. Procedures for using this system must be established. The procedures must prevent contamination of areas outside the abatement area.

(7) Negative pressure within the enclosure must be established as follows:

(a) A ventilation system must be installed to create a negative pressure within the enclosure with respect to the area outside the enclosure. The ventilation system must be equipped with HEPA filtration to prevent the release of asbestos fibers outside the enclosure. The ventilation system must be operated continuously for the duration of the project, until the final cleanup is completed and acceptable clearance air monitoring results are obtained. Whenever feasible, the ventilation system must be positioned to exhaust filtered air to the outside of the building.

(b) At a minimum, each HEPA filtered ventilation system must be equipped with the following:

- i. a calibrated pressure gauge;
 - ii. a built-in mechanism for automatic unit shut-down in the event of a breach in the filter or in the absence of a filter;
 - iii. an audible alarm if the ventilation system shuts down;
- and
- iv. a built-in mechanism to ensure the ventilation system will not operate unless it is positioned correctly.

(c) The air pressure within the enclosure must be established and maintained as follows:

- i. From the time construction of the enclosure is completed through the time acceptable clearance air monitoring results are obtained, a sufficient amount of air must be exhausted to create a pressure of -0.02 inches of water within each enclosure with respect to the area outside of the enclosure. The amount of air exhausted must provide at least four air changes per hour, based on no more than 75 percent of the operating maximum cubic feet per minute discharge for the ventilation system. A manometer or pressure gauge equipped with a recording device must be used continuously to establish, monitor, and document negative pressure within the enclosure, and must remain in place until the area passes final clearance air testing. The manometer or pressure gauge must be monitored frequently throughout all abatement work shifts and must be zeroed and calibrated before work begins each day. A nonrecording manometer or pressure gauge may be substituted for a continuously recording instrument provided that hourly pressure readings are documented during all work shifts. Placement of the manometer or pressure gauge must be as far from the intake of the HEPA filtered ventilation system as practicable and selected to ensure that the reading is of the abatement area.

- ii. Where the asbestos abatement contractor is unable to establish and maintain a pressure of -0.02 inches of water within the enclosure, a pressure as close to -0.02 inches of water as possible must be established and maintained, from the time barrier construction is completed through the time acceptable clearance air monitoring results are obtained. A sufficient amount of air must be exhausted to provide at least six air changes per hour, based on no more than 75 percent of the operating maximum cubic feet per minute discharge for the ventilation system.

(8) During asbestos related work, warning signs in accordance with Code of Federal Regulations, title 29, section 1926.58(k) shall be displayed at all approaches to any location where airborne fiber levels can be expected to exceed the clearance air level.

(9) All vacuuming equipment used for asbestos related work must be HEPA filtered.

C. In addition to the general requirements for all asbestos related work under items A and B, the following specific abatement procedures apply to removal, encapsulation, or enclosure operations.

(1) Removal operations must proceed as follows:

- (a) Components covered with asbestos containing material that are to be removed must be removed intact or in large sections whenever possible and carefully lowered to the floor.

- (b) Asbestos containing material must be removed in small sections and placed in containers while wet. Material must not be allowed to dry. Structural components must be thoroughly wetted and sealed in 6-mil polyethylene sheeting or comparable material before disposal.

- (c) Prior to the final inspection prescribed under item E, the

asbestos abatement contractor must notify the contracting entity of any asbestos containing material that was contracted to be removed, but was left in place because it was inaccessible. If the contracting entity agrees that the material removal is not feasible, then the asbestos containing material left in place must be encapsulated or enclosed. If encapsulated, the encapsulating material must be dyed a contrasting color.

The enclosed or encapsulated asbestos containing material must be specially designated according to Code of Federal Regulations, title 29, section 1926.58(k)(2), to warn individuals who may disturb the area. These inaccessible areas must be recorded on a building plan, sketch, or written description provided to the contracting entity by the asbestos abatement contractor.

(d) For porous surfaces stripped of asbestos containing materials, a coating of encapsulating agent must be applied after the area has passed the visual inspection required under item E, to securely seal any residual fibers. The encapsulating agent must be compatible with subsequent coverings. The encapsulation procedure must comply with subitem (2).

(e) Metal or fiber drums with locking ring tops must be used for disposal of asbestos containing waste material that contains sharp edges, unless the sharp edges can be covered or blunted.

(2) Encapsulation operations must meet the following requirements:

(a) Any loose or hanging asbestos containing material must be removed according to subitem (1).

(b) Filler material applied to gaps in existing material must contain no asbestos, adhere well to the substrate, and provide an adequate base for the encapsulating agent.

(c) Encapsulants must be applied using only airless spray equipment with air pressure and nozzle orifice as recommended by the encapsulant manufacturer.

(d) Encapsulants must not be solvent based or use a vehicle consisting of hydrocarbons.

(e) Encapsulated asbestos containing materials must be specially designated according to Code of Federal Regulations, title 29, section 1926.58(k)(2), to warn individuals who may disturb the material.

(3) Enclosure operations must meet the following requirements:

(a) Any asbestos containing materials that will be disturbed during the installation of hangers, brackets, or other portions of the enclosure must be sprayed with amended water.

(b) Any loose or hanging asbestos containing material must be removed in accordance with the requirements of subitem (1).

(c) A permanent enclosure constructed as an alternative to removal or encapsulation must consist of a permanent barrier with impermeable sides, designed to minimize air movement across the enclosure boundary. The permanent enclosure must render the area behind it inaccessible and must be specially designated according to Code of Federal Regulations, title 29, section 1926.58 (k)(2), to warn individuals who may disturb the enclosure.

(4) For demolition operations, clearance air sampling, as required under item F, subitem 3, is only required if the area in which abatement occurred will be used before demolition by persons not involved in asbestos related work. Under this exception, all surfaces not subject to aggressive air sampling methods must be encapsulated, after postcleaning in compliance with item D is complete, and after the area has passed the visual inspection required under item E.

All other provisions of these rules apply to demolition operations.

D. After the asbestos abatement is complete, the entire abatement area

shall be cleaned, using HEPA vacuuming and wet cleaning methods, until no asbestos dust is visible.

E. The asbestos abatement contractor must conduct a final, visual inspection of the abatement area that meets the following requirements:

(1) The asbestos abatement contractor must perform the final, visual inspection inside the abatement area after it has been cleaned and has dried completely. Any residue observed in the area is considered to be asbestos, and the sequence of cleaning and inspection must be repeated as prescribed by items E and F until the area passes the final, visual inspection.

(2) A checklist for the visual inspection, comparable to Code of Federal Regulations, title 29, section 1926.58, appendix F, figure F-7, must be used. At a minimum, the visual inspection must consist of the following two tests:

(a) The asbestos abatement contractor must examine surfaces for visible dust and debris, using a dark, damp cloth to collect the dust from these surfaces and then inspecting the cloth for evidence of dust. Particular attention must be given to horizontal surfaces.

(b) If possible, the asbestos abatement contractor shall reduce the lighting in the abatement area and inspect the area for residue using a flashlight to illuminate any smooth horizontal surface, and running a finger across the illuminated area, noting if a line is left on the surface.

If an alternative clearance air level has been established pursuant to subpart 3, item D, and compliance with this procedure is not feasible, then the asbestos abatement contractor shall conduct a final, visual inspection of the abatement area to ensure that all surfaces are free of visible dust before the final air samples are collected.

F. The asbestos abatement contractor must comply, except as noted in subpart 1, with the indoor air standards under subpart 2, and general requirements for sampling and analysis under subpart 3, and the following specific air sampling requirements:

(1) Where asbestos related work is performed in a building occupied by persons not involved in asbestos related work, indoor air monitoring must be conducted outside the abatement area on a daily basis. For each abatement area, a minimum of two samples must be collected during each work shift that the building is occupied by persons not involved in asbestos related work. Sampling must be performed within ten feet of the abatement area, in areas selected to detect failures in the containment barriers.

(2) Whenever a HEPA filtered ventilation system is exhausted to the indoors during asbestos related work, asbestos air concentrations must be monitored daily in the vicinity of the exhaust.

(3) Clearance air sampling in the abatement area must meet the following requirements:

(a) Clearance air sampling must be conducted within the abatement area after it has been cleaned thoroughly, dried completely, and passed the final, visual inspection under item E. Critical containment barriers, including barriers over all windows, doors, and air passageways, must remain in place until analysis of clearance air samples is completed and the notification of the contracting entity under item C occurs.

The abatement project is not complete until all clearance air samples collected are less than or equal to the clearance air level. If any of the sampling results exceed this level, the area shall be recleaned according to item E and clearance air sampling must be repeated. Cleaning and resampling must be repeated, at intervals of no less than 24 hours, except within an industrial facility process area, until all samples collected in the abatement area meet the clearance air level.

(b) A minimum of five clearance air samples must be collected simultaneously within each enclosed abatement area. The sampling sites must be selected on a random basis to provide unbiased and representative samples.

Clearance air sampling must be done with equipment that has been cleaned and properly decontaminated before use. Sampling must be conducted under aggressive sampling conditions. Aggressive sampling conditions consist of the following minimum steps:

- i. Prior to air monitoring, floors, ceilings, and walls must be blown with the exhaust of, at a minimum, a one horsepower leaf blower.
- ii. Stationary fans must be placed in locations that do not interfere with air monitoring equipment. Fan air must be directed toward the ceiling. One fan shall be used for each 10,000 cubic feet of abatement area.
- iii. If electrical power is provided by extension cords and strip plug units, the power supply equipment must be underwriter laboratory approved and not modified. Wiring must be grounded, and ground fault interrupters must be used.
- iv. Equipment such as fans and pumps must be carefully wet wiped with clean water and disposable wipes before removal from the abatement area.

G. The asbestos abatement contractor must report the results of the final, visual inspection and clearance air sampling under aggressive conditions to the contracting entity. Critical containment barriers over all windows, doors, and air passageways must remain in place until the contracting entity grants permission to remove the barriers.

H. Following removal of the critical containment barriers, the asbestos abatement contractor must inspect all surfaces previously in contact with the barriers to ensure that no surface contamination is visible. Whenever contamination is observed, the entire area must be cleaned, using HEPA vacuuming and wet cleaning methods, until no contamination is visible. If an alternative clearance air level has been established pursuant to subpart 3, item D, and good cause exists to conclude that the contamination is due to ambient dust not associated with asbestos containing materials in an industrial facility, further cleaning is not required.

Subp. 5. Optional glove bag or mini enclosure procedures for certain jobs performed during asbestos related work. When an asbestos abatement work project includes removal of less than ten feet of pipe lagging or less than six square feet of asbestos containing material per room, for that portion of the project, the asbestos abatement contractor may opt to use the following minimum procedures as alternatives to the procedures in subpart 4, items B to H. The asbestos abatement contractor shall comply with the indoor air standards under subpart 2, and general requirements for sampling and analysis under subpart 3, except as noted in subpart 1.

A. The following minimum procedures must be followed:

(1) Glove bags must be constructed of transparent 6-mil polyethylene plastic or comparable material. Glove bags may not be used more than once. Sliding or moving the glove bag during the abatement procedure is not permitted.

(2) The glove bag must completely cover the area where asbestos work is to be done. Before abatement begins, all openings in the glove bag, including any openings from insertion of tools, sprayer, or a HEPA filter equipped vacuum nozzle, must be securely sealed with duct tape or equivalent material.

(3) A mini enclosure must be constructed of 6-mil polyethylene plastic sheeting or comparable material, and equipped with an HEPA filtered vacuum or portable ventilation system with HEPA filtration to create a negative pressure within the mini enclosure with respect to the area outside the mini enclosure. Negative pressure within the mini enclosure must be maintained until acceptable clearance air monitoring results indicate that the mini enclosure procedure is complete.

(4) Workers working inside the mini enclosure must, before leaving

the mini enclosure, remove and properly bag for disposal their outer layer of protective clothing or vacuum their outer protective clothing with a HEPA filtered vacuum cleaning machine.

(5) A remote worker decontamination enclosure system must be provided for and used by any worker performing abatement work in a glove bag or a mini enclosure during asbestos related work projects. Procedures for the use of this system must be established which prevent asbestos contamination outside the glove bag or mini enclosure system.

(6) Warning signs according to Code of Federal Regulations, title 29, section 1926.58(k), must be displayed at all approaches to any location where airborne fiber levels can be expected to exceed the clearance air level.

(7) The surface from which asbestos has been removed must be thoroughly cleaned until no trace of asbestos containing material is visible.

(8) Asbestos containing material exposed as a result of the abatement activity must be encapsulated so that the edges do not release asbestos fibers to the atmosphere when the glove bag or mini enclosure is removed. Encapsulated asbestos containing materials must be specially designated according to Code of Federal Regulations, title 29, section 1926.58(k)(2), to warn individuals who may disturb the material.

(9) When the asbestos removal and encapsulation are complete, a vacuum hose from an HEPA filtered vacuum must be used to collapse the glove bag. When the air has been removed from the glove bag, the glove bag must be squeezed tightly as close to the top as possible, twisted, and sealed with tape, keeping the asbestos containing materials in the bottom of the glove bag. The glove bag must be sealed in a properly labeled bag or container for disposal.

(10) After the glove bag or mini enclosure operation is complete, the interior of the enclosure must be cleaned using an HEPA filtered vacuum and wet wiping techniques, or an encapsulant must be applied to the inside of the mini enclosure to seal any asbestos fibers or debris.

B. A final, visual inspection of the abated area must be performed before the mini enclosure is removed. The procedure is not considered complete until all visible friable asbestos containing material is either removed or encapsulated.

C. During removal operations with a glove bag or mini enclosure, a minimum of one indoor air sample must be collected within ten feet of the glove bag or mini enclosure asbestos abatement operation. If three or more previous similar abatement activities have occurred in the preceding year and all samples were below the clearance air level, the one minimum air sample is not required.

(1) Sampling and analysis must be conducted in compliance with subpart 3.

(2) The area where the glove bag or the mini enclosure procedure was performed shall not be opened to persons not involved in asbestos related work until the indoor air samples collected are less than or equal to the clearance air level. If any of the sampling results exceed this level, the area shall be cleaned using a HEPA filtered vacuum cleaner and wet methods, and the indoor air sampling must be repeated.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

4620.3600 ENFORCEMENT ACTIONS.

Subpart 1. General. Under the Asbestos Abatement Act in Minnesota Statutes, sections 326.70 to 326.82, the commissioner can carry out enforcement actions, including inspections, suspension or revocation of a license or certificate, subpoenas, cease and desist orders, orders for corrective action, and actions for injunctive relief. Violators may also be charged with a misdemeanor, as authorized by the act.

Subp. 2. Inspections. The commissioner's designee may inspect asbestos related work projects as authorized by the Asbestos Abatement Act in Minnesota Statutes, sections 326.70 to 326.82. The commissioner's designee shall issue written notices of violations of the Asbestos Abatement Act, or parts 4620.3000 to 4620.3700, to the site supervisor or responsible person. Notices of violation shall specify the rule or statute violated, the nature of the violation, and the deadline for correction.

Subp. 3. Suspension or revocation of license or certificate. The commissioner may suspend or revoke a license or certificate as an alternative, or in addition to, other enforcement provisions of the Asbestos Abatement Act in Minnesota Statutes, sections 326.70 to 326.82, if the commissioner finds, after notice and opportunity for hearing in accordance with chapter 14 of Minnesota Statutes, that a licensee or certificate holder has committed serious or repeated violations of parts 4620.3000 to 4620.3700, or any provision of the Asbestos Abatement Act.

An order for suspension must indicate the time interval during which the suspension is in effect. After that time, the license or certificate may be renewed upon application by the license or certificate holder, according to the procedure in parts 4620.3200 and 4620.3300. An order for revocation shall indicate when and if application for a new license or certificate can be made.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

4620.3700 REQUIREMENTS FOR MINNESOTA APPROVAL OF ASBESTOS ABATEMENT TRAINING COURSES.

Subpart 1. Acceptance of prior training courses for initial license or certificate application. For purposes of license or certificate applications submitted before January 1, 1989, a training course taken between June 1, 1987 and December 31, 1988, is considered a Minnesota approved training course if it has full or contingent EPA approval, the license or certificate applicant completed the course within one year of application, and the course sponsor can verify successful completion of the training course.

Subp. 2. Minnesota approval of initial training courses. For purposes of license or certificate applications submitted on and after January 1, 1989, initial and refresher training courses for asbestos abatement contractors, site supervisors, and workers must meet the requirements in this part and must be approved by the commissioner in writing.

Subp. 3. Application procedures for Minnesota approval. Course sponsors seeking Minnesota approval of initial and refresher courses shall apply to the commissioner for approval.

A. Course sponsors must submit a properly completed application on a form provided by the commissioner that includes all application information required under Code of Federal Regulations, title 40, part 763, subpart E, appendix C, section III.

B. At least 30 days before the start of the course, the course sponsor must inform the commissioner in writing of any asbestos training course to be conducted by the course sponsor. The course sponsor must permit representatives of the commissioner to attend, evaluate, and monitor any asbestos training course and course examinations at no cost. Representatives of the commissioner need not give advance notice of their attendance.

C. A training course must meet the requirements of subpart 3, and the course sponsor shall make the revisions required by the commissioner before presenting a training course.

Any significant change in the content of a Minnesota approved course must be reported in writing to the commissioner at least 30 days before presenting the changed course. Failure to report a significant change in course content in advance shall result in cancellation of training course approval.

Subp. 4. Attendance requirements; enrollment limits; course content requirements. For training courses to be Minnesota approved, they must meet the requirements in items A to J.

A. The course sponsor must require that course participants attend the entire training course as a condition for successful course completion. The course sponsor must maintain a daily course sign in log as documentation of attendance for each training course.

B. Enrollment for initial and refresher worker training courses shall not exceed 24. For any asbestos abatement contractor, site supervisor, or worker training course, a sufficient number of instructors must be used to ensure that participants are provided with proper training. Student to teacher ratio for the hands on training groups shall not exceed 8 to 1.

C. Training must be provided by instructors who are deemed qualified by the commissioner and who meet the following minimum criteria:

(1) An instructor must have experience in presenting and evaluating adult education programs.

(2) Demonstration and hands on training must be taught by individuals with work experience in all phases of asbestos abatement work on asbestos abatement projects.

(3) An instructor must have sufficient training and work experience to effectively present the assigned subject matter.

D. A training course must include written examinations that meet the following requirements.

(1) Effective January 1, 1989, all Minnesota approved training courses must use written examinations provided by the commissioner.

(2) All course examinations must be administered and monitored by the course sponsor.

(3) The course sponsor assumes responsibility for the security of exam contents and shall enforce necessary requirements to ensure that the participant passes the exam on the participant's merit. Minimum security measures for the written exams include an empty chair between each participant, no written materials allowed on the writing surfaces other than the examination materials, and supervision and monitoring of exam administration by the sponsor.

E. If any of the participants in an asbestos abatement worker training course are unable to read, the course sponsor must make provisions for those persons to have the course exam administered orally, on an individual basis, so that the participant passes the examination on the participant's merit.

F. For initial training courses, course length and content must meet the following requirements:

(1) At a minimum, the initial training course for asbestos abatement contractors and site supervisors must meet the initial training course requirements in Code of Federal Regulations, title 40, part 763, subpart E, appendix C, section I(1)(D), and consist of a course which is at least four days in length. One day equals eight hours minus breaks and lunch.

(2) At a minimum, the initial training course for asbestos abatement workers must meet the initial training course requirements of Code of Federal Regulations, title 40, part 763, subpart E, appendix C, section I(1)(E), and consist of a course which is at least three days in length. One day equals eight hours minus breaks and lunch.

G. Training must include lectures, demonstrations, hands on training with demonstration testing, individual respirator fit testing, course review, and a closed book examination. The hands on training must be at least six hours in length, must permit each participant to have actual experience performing the tasks associated with asbestos abatement, and must include simulating asbestos

removal by removing asbestos substitute materials with adherent properties similar to asbestos from ceiling and pipe surfaces, demonstrating fit testing and use of suitable respiratory protection with at least six different respirator designs, using glove bags to simulate asbestos removal, donning full body protective clothing, and constructing a decontamination unit.

H. For a course participant to successfully complete the initial training course, the participant must first demonstrate proficiency to the instructor during the hands on portion of the course, and then pass a closed book, written examination, or oral examination for workers as allowed under item E, which meets the requirements of Code of Federal Regulations, title 40, part 763, subpart E, appendix C, section I(2). On and after January 1, 1989, the written examination for Minnesota approved courses shall be provided by the commissioner.

Any participant who fails to pass the initial training course examinations fails the course and must repeat the course and examinations.

I. At a minimum, the annual refresher courses for asbestos abatement contractors, site supervisors, and workers must meet the refresher course requirements of Code of Federal Regulations, title 40, part 763, subpart E, appendix C, section I(3), consisting of at least one eight hour day of training specifically tailored to asbestos abatement workers or asbestos abatement contractors and site supervisors, which includes changes in federal and state regulations, new developments in the state of the art procedures in asbestos abatement, and review of the key aspects of the initial training course.

J. On and after January 1, 1989, Minnesota approved annual refresher courses must include a closed book, written examination, or oral examination for workers as allowed under item E, provided by the commissioner. A participant who fails to pass the annual refresher examination fails the course and must repeat the course and examination.

Subp. 5. Granting course approval.

A. Provisional Minnesota approval shall be granted for an initial or refresher training course if the required information and documentation is submitted and is found to meet the requirements prescribed under this part. A letter shall be issued to the applicant stating that the course has provisional Minnesota approval, the date of issuance, and the date of expiration.

B. Full Minnesota training course approval shall be granted for a period of two years, after the commissioner grants provisional approval, conducts an on-site observation and evaluation of the training course, and determines that the applicant's asbestos training course meets the requirements of this part. A letter shall be issued to the applicant stating that the course is Minnesota approved, the date of issuance, and the date of expiration.

C. For out-of-state training programs presented on or after January 1, 1989, on-site observation and evaluation by the commissioner's designee may be waived for Minnesota approval if the course is approved by a state accreditation program that is comparable to the Minnesota program, and all other conditions prescribed under this part are met.

Subp. 6. Cancellation of course approval. The commissioner shall cancel training course approval if the commissioner finds that any of the criteria under this part are not met. The commissioner shall inform course sponsors in writing of the cancellation, the reasons for this action, and the conditions that must be met before reinstatement of course approval.

Subp. 7. Renewal of course approval. To renew full approval of a Minnesota approved training course, the applicant shall resubmit the information required in subpart 3. On-site observation is not required to renew a Minnesota approved course.

If a properly completed application for renewal is received at least 30 days but not more than 60 days before expiration of training course approval, the

sponsor's course approval shall not expire until final action on the application has been taken by the commissioner.

Statutory Authority: *MS s 144.05 para (c); 144.122; 326.78*

History: *13 SR 568*

4620.3900 APPLICATION.

Parts 4620.3900 to 4620.4800 apply to owners/operators of ice arenas in which internal combustion engine-powered ice resurfacing machines are used; and owners/operators of enclosed sports arenas in which other internal combustion engine-powered vehicles or equipment are used for racing, competition, or for demonstration including, but not limited to, midget cars, motorcycles, and snowmobiles.

Statutory Authority: *MS s 144.05; 144.12*

4620.4000 DEFINITIONS.

Subpart 1. Scope. For the purposes of parts 4620.3900 to 4620.4800, the following terms shall have the meanings given them unless the context clearly indicates otherwise.

Subp. 2. Applicant. "Applicant" means a person who applies for a certificate pursuant to parts 4620.3900 to 4620.4800.

Subp. 3. [Repealed by amendment, L 1977 c 305 s 39]

Subp. 4. Certificate. "Certificate" means a certificate of approval issued by the commissioner of health pursuant to parts 4620.3900 to 4620.4800.

Subp. 5. Certificate holder. "Certificate holder" means a person to whom a certificate is issued pursuant to parts 4620.3900 to 4620.4800.

Subp. 6. Enclosed sports arena. "Enclosed sports arena" means any building with a roof and a majority of the sides closed in which sporting events and demonstrations occur.

Subp. 7. Ice arena. "Ice arena" means any building with a roof and a majority of the sides closed which contains an ice rink.

Subp. 8. Person. "Person" means any natural person, corporation, partnership, or other business association and includes the state and its political subdivisions.

Subp. 9. Resurfacing machine. "Resurfacing machine" means internal combustion engine-powered ice resurfacing machine.

Statutory Authority: *MS s 144.05; 144.12 subd 1*

History: *L 1977 c 305 s 39*

4620.4100 RESURFACING MACHINES.

After July 1, 1973, no person shall own or operate an ice arena in which a resurfacing machine is used unless a certificate is issued by the commissioner of health. The certificate must be displayed in a conspicuous place in the ice arena. If all conditions specified in parts 4620.3900 to 4620.4800 are met, the commissioner of health shall issue a certificate.

Statutory Authority: *MS s 144.05; 144.12*

History: *L 1977 c 305 s 39*

4620.4200 APPLICATIONS FOR CERTIFICATE.

Applications for a certificate must be submitted on forms prescribed by the commissioner of health. The applicant must be the owner/operator of the arena. An application shall be submitted:

- A. prior to July 1, 1973, by all owners/operators of existing ice arenas;
- B. prior to commencement of operation by all owners/operators of new ice arenas; and

4620.4200 CLEAN INDOOR AIR

48

C. prior to subsequent change of the approved method of maintenance of required air quality conditions or the replacement or modification of the resurfacing machine. Modification of the resurfacing machine does not include routine maintenance or tune-ups.

Statutory Authority: *MS s 144.05; 144.12 subd 1*

History: *L 1977 c 305 s 39*

4620.4300 DOCUMENTATION OF AIR QUALITY CONDITIONS.

The applicant must document that acceptable air quality conditions can be maintained. Such conditions are: one-hour average air concentrations of not more than 30 parts of carbon monoxide per million parts of air by volume (30 ppm), and one-hour average air concentrations of not more than 0.5 ppm of nitrogen dioxide.

The commissioner of health may refuse to issue a certificate if the applicant's documentation is insufficient to demonstrate that acceptable air quality conditions will be maintained during all hours of operation.

Statutory Authority: *MS s 144.05; 144.12 subd 1*

History: *L 1977 c 305 s 39*

4620.4400 MAINTENANCE OF AIR QUALITY CONDITIONS.

Acceptable methods of maintenance of the required air quality conditions are:

A. proper ventilation;

B. proper mechanical adjustment of the internal combustion engine;

and

C. any other method acceptable to the commissioner of health. Such acceptance shall be based upon a reasonable demonstration by the certificate applicant that such alternate method is adequate to maintain the required air quality conditions.

When item B is proposed as a method of control, the name of the mechanic(s), his qualifications, and equipment proposed to be used must be included in the request.

Statutory Authority: *MS s 144.05; 144.12 subd 1*

History: *L 1977 c 305 s 39*

4620.4500 MEASUREMENT OF AIR QUALITY CONDITIONS.

Subpart 1. Measurement requirements. Air quality conditions shall be measured at least once per week. The measurement shall be made at board height at the red line of the ice 20 minutes after completion of resurfacing. The measurement shall be made each week at a time of maximum use of the resurfacing machine. This measurement shall be accepted as representing the one-hour average air concentration. A record of measurement findings shall be kept and made available to the commissioner of health upon request. Such additional measurements shall be made as considered necessary by the commissioner of health.

Subp. 2. Methods of measuring. Acceptable methods of measuring air quality conditions are:

A. gas detector tubes certified by the National Institute of Occupational Safety and Health; and

B. any other method acceptable to the commissioner of health. The burden is on the certificate applicant to prove that such methods are as accurate and reliable as that specified in item A.

Statutory Authority: *MS s 144.05; 144.12 subd 1*

History: *L 1977 c 305 s 39*

4620.4600 FAILURE TO MAINTAIN AIR QUALITY.

Subpart 1. **Corrective action necessary.** When one-hour averages of more than 30 ppm but less than 125 ppm of carbon monoxide and/or more than 0.5 ppm but less than 2 ppm of nitrogen dioxide exist in the arena, immediate corrective action must be taken. This may include an immediate increase in the ventilation rate and/or an increase in the interval between resurfacing operations. Subsequent tests shall be conducted to confirm the effectiveness of such action.

Subp. 2. **Report.** Whenever the conditions of subpart 1 occur, a report must be submitted to the commissioner of health within five working days explaining why the methods of air quality control had failed, what immediate corrective action was taken, and what action is planned to prevent recurrence of exceeding the air quality standards.

Subp. 3. **Substantial risk to health of persons.** One-hour average air concentrations of more than 125 ppm of carbon monoxide and/or more than 2 ppm of nitrogen dioxide constitute an imminent, substantial danger to the health of persons. The arena shall be closed immediately and all people evacuated. The arena may reopen when the air quality standards of part 4620.4300 are obtained and can be maintained. The same procedure prescribed in part 4620.4600, subpart 2, shall be followed.

Statutory Authority: *MS s 144.05; 144.12 subd 1*

History: *L 1977 c 305 s 39*

4620.4700 OTHER INTERNAL COMBUSTION ENGINES.

After July 1, 1973, no person who owns or operates an enclosed sports arena open to the general public shall permit the operation of other internal combustion engine-powered equipment or vehicles for racing, competition, demonstration, or other purposes unless a certificate is issued by the commissioner of health. If all conditions specified in parts 4620.3900 to 4620.4800 are met, the commissioner of health shall issue a certificate. The certificate must be displayed in a conspicuous place in the arena.

Applications for a certificate must be submitted at least 45 days prior to the event and upon forms prescribed by the commissioner of health. The application must be submitted by both the owner/operator of the arena and the sponsor of the activities which involve use of internal combustion engines.

The provisions of parts 4620.4300, 4620.4400, 4620.4500, subpart 2, and 4620.4600, subparts 1 and 3, shall also apply. Air quality conditions shall be measured and reports made as directed by the commissioner of health depending upon the specific type of activity to be conducted in the building.

Statutory Authority: *MS s 144.05; 144.12 subd 1*

History: *L 1977 c 305 s 39*

4620.4800 REVOCATION OR SUSPENSION OF APPROVAL; REINSTATEMENT.

The commissioner of health may suspend or revoke the approval granted pursuant to parts 4620.4100 and 4620.4700 upon the finding of violations of the provisions of parts 4620.3900 to 4620.4800. All proceedings shall be in accordance with the Minnesota Administrative Procedure Act, Minnesota Statutes, chapter 14.

A suspended or revoked certificate of approval shall be returned to the commissioner of health.

Reinstatement shall be in accordance with the suspension or revocation order and upon an adequate showing that the grounds for suspension or revocation shall not recur.

Statutory Authority: *MS s 144.05; 144.12 subd 1*

History: *L 1977 c 305 s 39*