4620.3592 INDOOR AIR MONITORING.

Subpart 1. **Applicability.** As part of every project, indoor air monitoring must be performed as specified in this part except that indoor air monitoring is not required:

A. when a project is performed in preparation for demolition of a facility and the facility will not be entered or occupied by any individual not involved with asbestos-related work during and after the project; or

B. if a domiciled owner of a single-family residence conducts a project in the single-family residence.

Subp. 2. **General.** Indoor air monitoring must be conducted outside the containment area during all asbestos-related work including preparation and cleanup from the time disturbance of asbestos-containing material occurs until the results of clearance air sampling indicate fiber levels in the air within the containment do not exceed the clearance standard or alternative clearance standard.

A. For each containment, two air samples must be collected simultaneously no less than once during every zero to five-hour period while abatement personnel are performing asbestos-related work.

B. One of the two indoor air monitoring samples required in item A must be collected within ten feet of the entrance to the decontamination unit. The other air sampling location must be selected to detect failures in the containment.

C. Sample collection must be performed within ten feet of the containment.

D. Sample collection and analysis must comply with this part and part 4620.3597, subparts 2 to 4.

Subp. 3. **Evacuation and corrective measures.** If, during the project, the fiber concentration in air measured outside the containment exceeds the indoor air standard, or the alternative indoor air standard, or one or more samples are too heavily loaded to allow for quantitative analysis, the steps in items A and B must take place.

A. Except as noted in subpart 4, the occupied area immediately adjacent to the asbestos work area must be evacuated.

B. Evacuated areas must not be reoccupied until:

(1) the containment barriers are examined by the site supervisor for holes or separations in the barriers and any holes or separations are repaired;

(2) the negative pressure of the containment is checked by the site supervisor and if not in compliance with part 4620.3570, is brought into compliance;

(3) the areas adjacent to the containment are cleaned using HEPA-filter vacuum cleaning, wet wiping methods, or both;

(4) following completion of subitems (1) to (3), five air samples have been collected simultaneously according to parts 4620.3596 and 4620.3597 in the area where elevated fiber levels occurred; and

(5) analysis indicates that the fiber concentration in all air samples collected under subitem (4) does not exceed the indoor air standard or the alternative indoor air standard.

Subp. 4. **Suspected nonasbestos dust.** When elevated fiber concentrations in the air outside the containment are suspected to be from nonasbestos dust in the air, evacuation of the occupied areas immediately adjacent to the asbestos work area may be delayed, provided the actions in this subpart are taken immediately.

A. The indoor air monitoring samples which indicate elevated fiber concentrations must be reanalyzed by transmission electron microscopy to distinguish between asbestos and nonasbestos fibers greater than five microns in length with an aspect ratio of three-to-one. Repeat analysis under this item must meet the requirements of "Mandatory Transmission Electron Microscopy Method," Code of Federal Regulations, title 40, chapter I, subchapter R, part 763, subpart E, appendix A, section II, Parts A, E, F, H, I, and J, amended through October 30, 1987, and as qualified in subitems (1) and (2).

(1) Code of Federal Regulations, title 40, chapter I, subchapter R, part 763, subpart E, appendix A, section II, part A, is modified as follows:

(a) The definition of "aspect ratio" is modified 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."

(b) The definition of "fiber" is modified 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."

(2) Code of Federal Regulations, title 40, part 763, subpart E, appendix A, section II, part F, is modified as follows:

(a) Paragraph 9(a) is modified 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:"

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

(c) Paragraph 9(a)(i) is modified to read:

"i. Fiber. A structure having minimum length greater than or equal to five 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."

(d) Paragraph 10(a) is modified 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."

B. If the analysis results obtained according to item A indicate the concentration of asbestos fibers in the air exceeds 0.01 fibers per cubic centimeter of air, the occupied area immediately adjacent to the asbestos work area must be evacuated and not reoccupied until the corrective measures of subpart 3, item B, have been performed and documented.

Subp. 5. **Indoor air monitoring during glove bag or mini-containment procedures.** When the glove bag or mini-containment procedures in parts 4620.3580 and 4620.3581 are used, indoor air monitoring must be performed according to this subpart.

A. At least two indoor air samples per room must be collected continuously from the time of initial disturbance of the asbestos-containing material until the time all glove bags or mini-containments have been removed in the room.

B. Indoor air samples during glove bag or mini-containment procedures must be collected within ten feet of the glove bag or mini-containment operation.

C. Sample collection and analysis must be completed according to subpart 4, item A, or part 4620.3597, subparts 2 to 4.

D. The glove bag or mini-containment operation is not complete and the asbestos work area must not be reoccupied until each of the indoor air samples has been analyzed and the result of each sample indicates a fiber level below the indoor air standard or the alternative indoor air standard.

E. Except as noted in item F, if any indoor air sample result exceeds the indoor air standard or the alternative indoor air standard, or if any indoor air sample is too heavily loaded to be quantitatively analyzed, subitems (1) to (3) must be followed.

(1) The area where the glove bag or mini-containment operation was performed must be recleaned and reinspected according to part 4620.3575, subpart 4.

(2) After recleaning and reinspection, at least two indoor air samples must be collected according to item C within ten feet of the area where the glove bag or mini-containment operation was performed.

(3) If any air sample result exceeds the indoor air standard or alternative indoor air standard, subitems (1) and (2) must be repeated.

F. When elevated fiber concentrations in the asbestos work area are suspected to be from nonasbestos dust in the air, the asbestos work area may be reoccupied if the following actions are taken:

(1) the actions required in subpart 4, item A, must be performed immediately; and

(2) if the analysis results obtained according to subpart 4, item A, indicate the concentration of asbestos fibers in the air exceeds 0.01 fibers per cubic centimeter of air, or if any indoor air sample is too heavily loaded to be quantitatively analyzed, the asbestos work area must be evacuated and the actions required in item E must be taken immediately.

Statutory Authority: *MS s 144.05; 326.70 to 326.81*

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