

## Standard Interpretations

/ Engineering controls for removal of asbestos-containing construction mastic (Class II work operations).

- **Standard Number:** 1926.1101(g)(7) ; 1926.1101(g)(8)

OSHA requirements are set by statute, standards and regulations. Our interpretation letters explain these requirements and how they apply to particular circumstances, but they cannot create additional employer obligations. This letter constitutes OSHA's interpretation of the requirements discussed. Note that our enforcement guidance may be affected by changes to OSHA rules. Also, from time to time we update our guidance in response to new information. To keep apprised of such developments, you can consult OSHA's website at <http://www.osha.gov>.

August 3, 2005

Ms. Wendy Blasser, MSPH, CIH  
Senior Loss Control Specialist  
Palm Beach County  
160 Australian Avenue  
Suite 401  
West Palm Beach, FL 33406

Dear Ms. Blasser:

Thank you for your June 25, 2004, letter to the Occupational Safety and Health Administration's (OSHA's) Directorate of Enforcement Programs. You have a question regarding controls for asbestos specified in OSHA's asbestos standards. This letter constitutes OSHA's interpretation only of the requirements discussed and may not be applicable to any question not delineated within your original correspondence. We apologize for the delay in our response. The scenario, your paraphrased question, and OSHA's reply are below.

**Scenario:** You are removing fiberglass insulation from metal air conditioning ducts. The fiberglass insulation is held in place on the duct by means of asbestos-containing black mastic applied at the seams of the fiberglass insulation wrap. The width of the black mastic running along the seams is two inches. The black mastic is intact. In the process of removing the fiberglass you must make five or six cuts through the 2-inch wide mastic for each 30-foot length of insulation removed. Due to the interference of fiberglass, you use Transmission Electron Microscopy (TEM) to analyze air samples for airborne asbestos concentrations.

**Question:** What controls does OSHA require for protecting employees from asbestos exposure during the fiberglass insulation removal operation described in the scenario?

**Reply:** The operation you describe involves removing an asbestos-containing construction mastic and is therefore a Class II asbestos work operation covered by OSHA's construction asbestos standard (29 CFR 1926.1101(b))<sup>1</sup>. Therefore, the controls set forth in the construction asbestos standard for performing Class II asbestos work must be instituted.

If the mastic is removed in a substantially intact state<sup>2</sup> and a negative exposure assessment for asbestos is produced, the barrier or isolation methods set forth at 29 CFR 1926.1101(g)(7)(ii)(A) or 1926.1101(g)(7)(ii) (B) are not required. However, the controls set forth at 29 CFR 1926.1101(g)(7)(i), 1926.1101(g)(7)(ii)(C) through 1926.1101(g)(7)(iv), and 1926.1101(g)(8)(v) through 1926.1101(g)(8)(v)(D) are still required.

When airborne fiberglass is present when sampling for airborne asbestos, analysis of the samples for producing negative exposure assessments for asbestos can still be and must be done by Phase Contrast Microscopy (PCM). Measurements made directly by TEM are unacceptable to OSHA in making assessments of exposure to asbestos; PCM is the method stipulated by the OSHA asbestos standards. (See 29 CFR 1926.1101, Appendices A and B.)

Those filters representing overexposures to asbestos when all the fibers counted are treated as asbestos, can be analyzed by NIOSH 7402 or OSHA's ratio protocol to determine the ratio of asbestos fibers in the original count. Both the original count and a value derived by multiplying the original count by the asbestos ratio are to be reported, and decisions are to be made on the basis of the derived value.

Alternatively, a differential PCM count can be made on the filter. Although PCM does not unequivocally identify asbestos fibers, many non-asbestos fibers which occur in industrial atmospheres can be excluded on the basis of characteristics that are observable in the PCM. Most industrial glass fibers fall into this category. Where the exclusionary characteristics are not clear, the fibers must be counted as asbestos.

Information useful in performing differential counting can be found in ID 160, (29 CFR 1926.1101, Appendix B) OSHA's fiber counting method, and ID 191, (29 CFR 1926.1101, Appendix J), OSHA's bulk asbestos method. The most recent versions of these are available on-line through OSHA's web site at [www.osha.gov](http://www.osha.gov).

If you would like to discuss these analytical procedures in detail, please feel free to contact Daniel T. Crane at the OSHA Salt Lake City Technical Center directly. He may be contacted by telephone at 801-233-4900 or electronically at [crane.dan@dol.gov](mailto:crane.dan@dol.gov).

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

Sincerely,

Richard E. Fairfax, Director  
Directorate of Enforcement Programs

<sup>1</sup> A definition at 29 CFR 1926.1101(b) of the construction asbestos standard states, "**Class II asbestos work** means activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics." [ back to text ]

<sup>2</sup> If the mastic is intact and it is removed by making fine cuts through it with a sharp instrument, OSHA interprets the mastic to have been removed in a substantially intact state. [ back to text ]

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