

Appendix D: Asbestos

"Asbestos" describes six naturally occurring fibrous minerals found in certain types of rock formations. When mined and processed, asbestos is typically separated into very thin fibers that are normally invisible to the naked eye. They may remain in the air for many hours if released from asbestos-containing material (ACM) and may be inhaled during this time. Three specific diseases — asbestosis (a fibrous scarring of the lungs), lung cancer, and mesothelioma (a cancer of the lining of the chest or abdominal cavity) — have been linked to asbestos exposure. It may be 20 years or more after exposure before symptoms of these diseases appear; however, high levels of exposure can result in respiratory diseases in a shorter period of time.

Most of the health problems resulting from asbestos exposure have been experienced by workers whose jobs exposed them to asbestos in the air over a prolonged period without the worker protection that is now required. Asbestos fibers can be found nearly everywhere in our environment (usually at very low levels). While the risk to occupants is likely to be small, health concerns remain, particularly for the custodial and maintenance workers in a building. Their jobs are likely to bring them into proximity to ACM and may sometimes require them to disturb the ACM in the performance of maintenance activities.

EPA estimates that "friable" (easily crumbled) ACM can be found in an estimated 700,000 public and commercial buildings. About 500,000 of those buildings are believed to contain at least some damaged asbestos. Significantly damaged ACM is found primarily in building areas

not generally accessible to the public, such as boiler and mechanical rooms, where asbestos exposures generally would be limited to service and maintenance workers. However, if friable ACM is present in air plenums, it can be distributed throughout the building, thereby possibly exposing building occupants.

When is asbestos a problem? **Intact and undisturbed asbestos materials do not pose a health risk.** The mere presence of asbestos in a building does not mean that the health of building occupants is endangered. ACM which is in good condition, and is not damaged or disturbed, is not likely to release asbestos fibers into the air. When ACM is properly managed, release of asbestos fibers into the air is reduced, and the risk of asbestos-related disease is thereby correspondingly reduced.

There are a number of guidelines and regulations that govern asbestos exposure. Occupational standards for preventing asbestos-related diseases are recommended by NIOSH and promulgated by OSHA. NIOSH guidance contain Recommended Exposure Limits (RELs) and OSHA standards set Permissible Exposure Limits (PELs). The standards also contain many other measures, such as surveillance, medical screening, analytical methods, and methods of control. OSHA regulations and the EPA Worker Protection Rule also provide guidance on day-to-day activities that may bring workers in contact with ACM. EPA National Emission Standards for Hazardous Air Pollutants (NESHAP) define acceptable practices for renovation and demolition activities that involve asbestos-containing materials. In addition, many States have set exposure standards and other regulations concerning asbestos.

EPA and NIOSH recommend a practical approach that protects public health by emphasizing that ACM in buildings should be identified and appropriately managed, and that those workers who might disturb it should be properly trained and protected.

EPA AND NIOSH POSITIONS ON ASBESTOS

In an effort to calm unwarranted fears that a number of people seem to have about the mere presence of asbestos in their buildings and to discourage the decisions by some building owners to remove all ACM regardless of its condition, the EPA Administrator issued an *Advisory to the Public on Asbestos in Buildings* in 1991. This advisory summarized EPA's policies for asbestos control in the presentation of the following "five facts":

- Although asbestos is hazardous, the risk of asbestos-related disease depends upon exposure to airborne asbestos fibers.
- Based upon available data, the average airborne asbestos levels in buildings seem to be very low. Accordingly, the health risk to most building occupants also appears to be very low.
- Removal is often not a building owner's

best course of action to reduce asbestos exposure. In fact, an improper removal can create a dangerous situation where none previously existed.

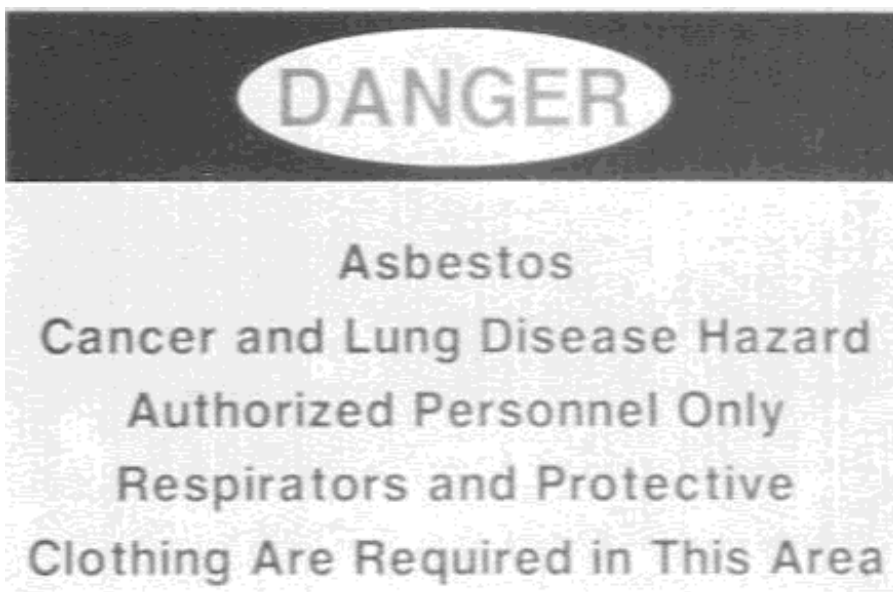
- EPA only requires asbestos removal in order to prevent significant public exposure to airborne asbestos fibers during building demolition or renovation activities.
- EPA does recommend a pro-active, in-place management program whenever asbestos-containing material is discovered.

NIOSH's position on asbestos exposure has been expressed in NIOSH policy statements and internal reports and at OSHA public hearings:

- NIOSH recommends the goal of eliminating asbestos exposure in the workplace. Where exposures cannot be eliminated, exposures should be limited to the lowest concentration possible.
- NIOSH contends that there is no safe airborne fiber concentration for asbestos. NIOSH therefore believes that any detectable concentration of asbestos in the workplace warrants further evaluation and, if necessary, the implementation of measures to reduce exposures.
- NIOSH contends that there is no scientific basis to support differentiating health risks between types of asbestos fibers for regulatory purposes.

Copies of the EPA and NIOSH policy statements and public advisories are available, respectively, from those agencies. See the last section in this appendix and the *Resources* section for information on how to obtain them.

OSHA requires that signs be posted around areas where work is being done that involves damaged asbestos-containing materials. These signs must communicate specific types of information.



PROGRAMS FOR MANAGING ASBESTOS IN-PLACE

In some cases, an asbestos operations and maintenance program is more appropriate than other asbestos control strategies, including removal. Proper asbestos management is neither to rip it all out in a panic nor to ignore the problem under the false presumption that asbestos is “risk free.” Health concerns remain, particularly for custodial and maintenance workers.

In-place management does not mean “do nothing.” It means having a program to ensure that the day-to-day management of the building is carried out in a manner that minimizes release of asbestos fibers into the air, and that ensures that when asbestos fibers are released, either accidentally or intentionally, proper control and clean-up procedures are implemented. Such a program may be all that is necessary to control the release of asbestos fibers until the asbestos-containing material in a building is scheduled to be disturbed by renovation or demolition activities.

The first responsibility of a building owner or manager is to identify asbestos-containing materials, through a building-wide inventory or on a case-by-case basis, before suspect materials are disturbed by renovations or other actions. The Asbestos Hazard Emergency Response Act (AHERA) program requires that in schools an inventory of asbestos materials be done by properly accredited individuals. Starting in late 1991 or 1992, there will also be a requirement that if an inventory of asbestos materials is done in public and commercial buildings, the inventory must be done by properly accredited individuals. In public and commercial buildings facing major renovations or demolition, inspections for the presence of ACM are required, according to the 1990 revision of the EPA Asbestos NESHAP. A carefully designed air monitoring program can be used as an adjunct to visual and physical evaluations of the asbestos-containing materials.

After the material is identified, the building management and staff can then institute controls to ensure that the day-to-day management of the building is carried out in a manner that prevents or minimizes the release of asbestos fibers into the air.

These controls will ensure that when asbestos fibers are released, either accidentally or intentionally, proper management and clean-up procedures are implemented.

Another concern of EPA, NIOSH, and other Federal, State, and local agencies that are concerned with asbestos and public health is to ensure proper worker training and protection. In the course of their daily activities, maintenance and service workers in buildings may disturb materials and thereby elevate asbestos fiber levels and asbestos exposure, especially for themselves, if they are not properly trained and protected. For these persons, risk may be significantly higher than for other building occupants. Proper worker training and protection, as part of an active in-place management program, can reduce any unnecessary asbestos exposure for these workers and others. AHERA requires this training for school employees whose job activities may result in asbestos disturbances.

In addition to the steps outlined above, an in-place management program will usually include notification to workers and occupants of the existence of asbestos in their building, periodic surveillance of the material, and proper recordkeeping. EPA requires all of these activities for schools and strongly recommends that other building owners also establish comprehensive asbestos management programs. Without such programs, asbestos materials could be damaged or could deteriorate, which might result in elevated levels of airborne asbestos fibers. While the management costs of all the above activities will depend upon the amount, condition, and location of the materials, such a program need not be expensive.

WHERE TO GO FOR ADDITIONAL INFORMATION

For guidance on asbestos, building owners and managers are urged to become familiar with two EPA documents: *Managing Asbestos in Place* (published in 1990 and also known as the “Green Book”) and *Guidance for Controlling Asbestos-Containing Materials in Buildings* (published in 1985 and also known as the “Purple Book”).

To obtain copies of the guidance publications and other materials mentioned above, or to get additional information on technical issues, call or write:

Environmental Assistance Division

Office of Toxic Substances
U.S. EPA (TS-799)
401 M Street SW
Washington, DC 20460
Telephone (TSCA Information Hotline):
202-554-1404

National Institute for Occupational Safety and Health

Technical Information Branch
4676 Columbia Parkway
Cincinnati, OH 45226
Telephone: 1-800-35-NIOSH or
1-800-356-4674

Contact State air pollution control or health agencies for information on pertinent State activities and regulations. To find an asbestos contact in State agencies, consult the EPA Directory of State Indoor Air Contacts. For a more complete listing of publications concerning asbestos, refer to *Appendix G*.