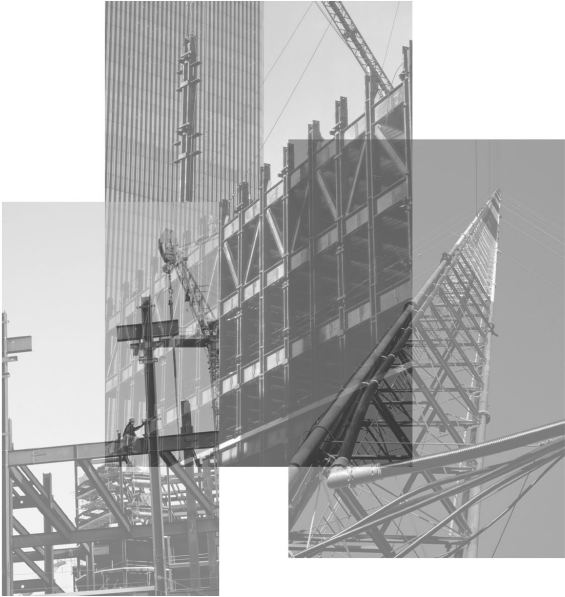


US EPA ARCHIVE DOCUMENT



## X. Asbestos Requirements for Construction Activities

**B**efore beginning any demolition or renovation activities on existing buildings, you should evaluate the potential for releasing asbestos. Because exposure to asbestos can cause serious health problems such as asbestosis (diffuse fibrous scarring of the lung tissue) and certain types of cancer, EPA and the Occupational Safety and Health Administration (OSHA) have promulgated rules regulating its production, use, and disposal. These rules include the Asbestos School Hazard Abatement Reauthorization Act (ASHARA), the Asbestos Hazard Emergency Response Act (AHERA), the Asbestos Ban and Phaseout Rule, and the Asbestos National Emissions Standards for Hazardous Air Pollutants (NESHAP), promulgated under the Clean Air Act. The regulatory text discussing this program (40 CFR Part 302 and Part 763) can be found at <http://ecfr.gpoaccess.gov> under "Title 40 - Protection of the Environment." OSHA regulates private sector and some public sector employees' exposure to asbestos and specifies work practices and engineering controls for removing and handling asbestos. The OSHA rules can be found in Title 29 of the Code of Federal Regulations (29 CFR 1910.1001, 29 CFR 1915.100, and 29 CFR 1926.1101). The EPA

### Definitions and Acronyms

**Adequately Wet**—Sufficiently mixed with liquid to prevent the release of particulates. If visible particles or dust are observed coming from asbestos-containing material, then that material has not been adequately wetted.

**Asbestos**—The name given to a number of naturally occurring fibrous silicate minerals that have been mined for their useful properties such as thermal insulation, chemical and thermal stability, and high tensile strength. The NESHAP

defines asbestos to be the asbestiform varieties of serpentine (chrysotile), riebeckite (crocidolite), cummingtonite-grunerite, anthophyllite, and actinolite-tremolite.

**Friable**—Asbestos that can be reduced to dust by hand pressure.

**Non-friable**—Asbestos that is too hard to be reduce to dust by hand.

## Definitions and Acronyms

**Owner or Operator of a Demolition or Renovation Activity**—Any person who owns, leases, operates, controls, or supervises the facility being demolished or renovated or any person who owns, leases, operates, controls, or supervises the demolition or renovation operation, or both.

**ACM**—Asbestos Containing Materials

**AHERA**—Asbestos Hazard Emergency Response Act

**ASHARA**—Asbestos School Hazard Abatement Reauthorization Act

**NESHAPs**—National Emission Standards for Hazardous Air Pollutants

**OSHA**—Occupational Safety and Health Administration

**RACM**—Regulated Asbestos Containing Materials

**TSCA**—Toxic Substances Control Act

Worker Protection Rule provides identical regulations to cover certain state and local government workers who are not protected by OSHA regulations. AHERA regulates asbestos contained in schools, requires the development of management plans, specifies work practices and engineering controls for removing and handling asbestos, and sets emissions limitations in schools after an abatement activity is completed. The asbestos NESHAP regulations address the removal, disposal, and environmental fate of asbestos. This chapter discusses ONLY the NESHAP regulations because that is the most applicable regulation to the construction industry. Some states also have established asbestos requirements that extend beyond the federal requirements.

### A. Could Your Construction Project Site Have Asbestos-Containing Materials (ACM) or Regulated Asbestos-Containing Materials (RACM)?

Since asbestos is strong yet flexible, does not burn, and insulates effectively, asbestos-containing materials (ACM) have been used broadly since post-World War II in building construction. ACM were used primarily in insulation, fireproofing, soundproofing, and decorative products.

Most people think that asbestos is banned in the United States; however, asbestos is still intentionally added to many building materials and occurs as a contaminant in others. Therefore, it is likely that many new building products at a construction site will contain asbestos. The most likely sources of ACMs at construction sites are:

- Insulation, including blown, rolled, and wrapped;
- Resilient floor coverings (tiles);
- Asbestos siding shingles;
- Asbestos-cement products;
- Asphalt roofing products;
- Vermiculite insulation; and
- Sand and gravel.

**EPA Region 6 has compiled a list of suspected asbestos-containing materials at:**  
<http://www.epa.gov/Region06/6pd/asbestos/asbmatl.htm>.

Asbestos has been detected in indoor air, where it is released from a variety of building materials including insulation and ceiling and floor tiles. It is only released, however, when these building materials are damaged or degrade to the point that they are in poor condition. Regulations governing the removal of asbestos building materials must be followed to protect both the construction workers and the public from asbestos releases.

### Classifying ACM

The Asbestos NESHAP is applicable to the construction industry as it involves demolition and renovation activities, containment, transportation and disposal. It classifies ACMs into three categories: friable, Category I non-friable, and Category II non-friable. Friable ACM (defined by being able to crumble under the pressure of your hand) are always regulated ACM (RACM) under the NESHAP when being disturbed during demolition or renovation. An example of friable ACM is spray-applied asbestos fireproofing. Category I materials, such as floor tiles, are RACM only when they "will be or have been subjected to sanding, grinding, cutting, or abrading," they are in "poor condition" and "friable," or the structure in which they are located will be demolished by burning. The applicability of the asbestos NESHAP to Category II non-friable materials, such as asbestos-cement products, is determined on a case-by-case basis. Encapsulating friable ACM does not exempt you from the Asbestos NESHAP if you are renovating or demolishing structures with ACM.

In general, cleanup activities such as loading debris onto trucks for disposal do not expose non-friable materials to sanding, grinding, cutting, or abrading, and therefore do not cause Category I or II non-friable ACM to become RACM. However, if you perform post-demolition activities involving waste consolidation and recycling in which you sand, grind, cut, or abrade Category I or II non-friable ACM, then the materials become RACM and are subject to the provisions of the asbestos NESHAP. An example of waste consolidation that falls into this category is the use of jack hammers or other mechanical devices such as grinders to break up asbestos-containing concrete.

## B. Are You Responsible for Addressing ACM Wastes?

For the purpose of identifying ACM wastes, EPA defines the "generator" as being responsible for handling, storing, transporting, and disposing of RACM wastes. The "generator" is considered the party that owns the

### Vermiculite Attic Insulation:

Vermiculite attic insulation has the potential to contain contaminant asbestos fibers. Most of the world's supply of vermiculite once came from a mine near Libby, Montana, prior to its close in 1990. This mine has a natural deposit of asbestos which resulted in the vermiculite being contaminated with asbestos. Insulation produced using vermiculite ore, particularly ore that originated from the Libby mine, is known to contain asbestos fibers. Vermiculite is a slippery, light-weight pebble-like pour-in insulation product which is usually light-brown or gold in color. It is also commonly used in interstitial spaces in attics, between floors in multistory commercial buildings, and in the interstitial columnar spaces of cement block structures.

EPA and the Agency for Toxic Substances and Disease Registry (ATSDR) have produced a consumer guidance brochure which presents the current best practices for vermiculite attic insulation. You can get a copy of the brochure electronically at <http://www.epa.gov/asbestos/verm.html>, or you can call 1-800-471-7127. NIOSH has produced a vermiculite factsheet targeted towards workers, that can be obtained at <http://www.cdc.gov/niosh/docs/2003-141/>.

material. For most construction projects, multiple parties will be involved; all may be liable if the ACM handling and disposal requirements are not followed.

EPA has found that demolition contractors typically require that a building owner/operator accept responsibility for removing all ACM found during the building inspection prior to the start of demolition activities. Note that the Asbestos NESHAP does not require a building owner or operator to remove damaged or deteriorating ACM unless a renovation of the facility is planned that would disturb the ACM and the disturbed ACM exceeds the threshold amount. However, all OSHA requirements for worker and environmental protection will still apply.

The NESHAP regulation states that either the owner of the building or operator of the demolition or renovation operation can submit the required construction notification. You will need to decide together who will submit the notification. If neither provides adequate notice, EPA may hold either or both parties liable.

### **C. What Are the Penalties?**

Federal environmental laws give a range of enforcement options to EPA, state agencies, and individual citizens. Most laws authorize EPA to: (1) issue an administrative order or impose an administrative penalty, (2) to file a civil action in a federal court for either injunctive relief or a civil penalty, or (3) to file a criminal action in a federal court to impose criminal sanctions.

In addition to fines, you may need to pay legal fees and face project delays. If legal action is taken against your construction site, you also may be subject to increased scrutiny at all of your other construction sites by regulatory agencies and the public.

If you do not follow the ACM management and disposal standards, you may be fined civil penalties of up to \$32,500 per day per violation. You also may be fined if you release ACM waste into the environment. You can lose any existing permits for your construction site and/or need to stop work until you meet EPA requirements.

You also may face penalties or actions for past or present handling, storage, treatment, transportation, or disposal of ACM waste that may be a hazard to human health or the environment.

### **D. In General, What are the Removal and Disposal Requirements?**

#### **Inspection**

The Asbestos NESHAP requires that you have your site inspected by a certified asbestos inspector prior to beginning any renovation or demolition activities. Owners and operators are responsible for having bulk samples of suspected ACM collected and analyzed prior to the start of construction activities.

#### **Notification**

You must submit a written notice of intent to renovate or demolish 10 working days prior to starting any construction activities. Notifications must contain certain specified information, including but not limited to, the scheduled starting and completion dates of the work, the location of the site, the names of operators or asbestos removal contractors, methods of removal and the amount of asbestos, and whether the operation is a demolition or a renovation.



You should submit the completed notification to your delegated state/local pollution control agency and your EPA Regional Office. Some EPA Regions require that both the EPA Regional Office and the local delegated agency be notified, while some require notice only to the delegated state or local agency.

Even if no asbestos is present at your site, you still must notify the appropriate regulatory agency of your intent. All demolitions and renovations are subject to the Asbestos NESHAP because you must first determine if and how much asbestos is present at the site.

### Removal and Disposal

The Asbestos NESHAP does not place specific numerical emission limitations for asbestos fibers on asbestos demolitions and removals. However, the Asbestos NESHAP does specify zero visible air emissions from construction activities. To meet the zero visible emissions requirement, the Asbestos NESHAP requires that you follow specific work practices including a requirement that you sufficiently wet any asbestos-containing materials to prevent release of fibers prior to, during, and after renovation/demolition activities and until disposal.

Under normal circumstances, Category I non-friable materials are not considered RACM and you will not need to remove them prior to demolition or renovation. In this case, they may also be disposed of in a landfill that accepts ordinary demolition waste. If, however, Category I materials have become friable or are in poor condition, you will have to remove them. Also, if you sand, grind, abrade, drill, cut, or chip any non-friable materials, including Category I materials, you must treat the material as RACM, if more than the threshold amount is involved.

Category II non-friable materials should be evaluated on a case-by-case basis. If category II non-friable materials are likely to become crushed, pulverized, or reduced to powder during demolition or renovation, remove them before demolition or renovation begins. For example, you should remove asbestos cement (A/C) siding on a building that is going to be demolished with a wrecking ball because it is likely that the wrecking ball will pulverize the siding.

All RACM in poor condition should be properly transported in leak-tight containers or wrapped and disposed of at an acceptable asbestos disposal site. State and local agencies that require handling or licensing procedures can supply a list of approved or licensed asbestos disposal sites upon request. Solid waste control agencies are listed in local telephone directories under state, county, or city headings.

You must follow the Asbestos NESHAP regulations if your renovations or demolitions include at least 80 linear meters (260 linear feet) of RACM on pipes, 15 square meters (160 square feet) of RACM on other facility components, or at least one cubic meter (35 cubic feet) of facility components where the amount of RACM previously removed from pipes and other facility components could not be measured before stripping. These amounts are known as the "threshold" amounts.

Note that the Asbestos NESHAP does not apply to residential structures with four or fewer dwellings (i.e., apartments or single family homes).

**For more information, see Section 40 CFR Part 61.145(b) of the Asbestos NESHAP regulation or call EPA's Asbestos hotline at 1-800-368-5888.**

## E. What Questions Do You Need to Answer Before Starting Your Construction Project?

You can use the questions in Section II of Part I of this guide to start a discussion among all parties involved in the construction project and to assign tasks to ensure all environmental requirements are met. Each question has a space next to it to designate who will take the lead on each task. Note that designating a responsible party does not absolve you of meeting environmental requirements or liability for failing to meet these requirements.

## F. Where Can You Get Additional Information?

Many tools are available to assist you with the Asbestos NESHAP permit requirements, including the following:

- The Asbestos Self-Audit Checklist in Part II of this guide;
- EPA's Asbestos Management & Regulatory Requirements web site contains links to all of the asbestos regulations: <http://www.epa.gov/fedsite/cd/asbestos.html>;
- The National Environmental Compliance Assistance Clearinghouse contains a search engine to help in finding compliance assistance tools, contacts, and EPA-sponsored programs: <http://www.epa.gov/clearinghouse/>;
- The San Joaquin Valley Air Pollution Control District Demolitions and Renovations web page contains a concise summary of the regulation and links to local notification forms: <http://www.valleyair.org/busind/comply/asbestosbultn.htm>;
- EPA's Region 4 asbestos web page contains links to several informative question and answer and fact sheets related to demolition and renovation: <http://www.epa.gov/region04/air/asbestos/asbestos.htm>;
- EPA's Region 4 demolition and renovation summary page: <http://www.epa.gov/region04/air/asbestos/demolish.htm>;
- EPA's Region 4 general asbestos question and answer web page contains contact phone numbers for each of the asbestos regulations: <http://www.epa.gov/region04/air/asbestos/inform.htm>;
- OSHA's Asbestos web page contains health and safety information related to asbestos: <http://www.osha-slc.gov/SLTC/constructionasbestos/index.html>;
- EPA's vermiculite web site provides information on asbestos in vermiculite: <http://www.epa.gov/asbestos/verm.html>;
- NIOSH's web site contains general information on vermiculite as well as recommendations for limiting potential exposures of workers to asbestos associated with vermiculite: <http://www.cdc.gov/niosh/docs/2003-141/>;
- The Agency for Toxic Substances and Disease Registry (ATSDR) has developed a toxicological profile for asbestos that presents general information regarding the sources and known health effects of asbestos: <http://www.atsdr.cdc.gov/toxprofiles/tp61.html>;
- EPA's Asbestos Ombudsman: 1-800-368-5888; and
- EPA's "Where you live" page contains links to state environmental agencies: <http://www.epa.gov/epahome/wherelive.htm>.