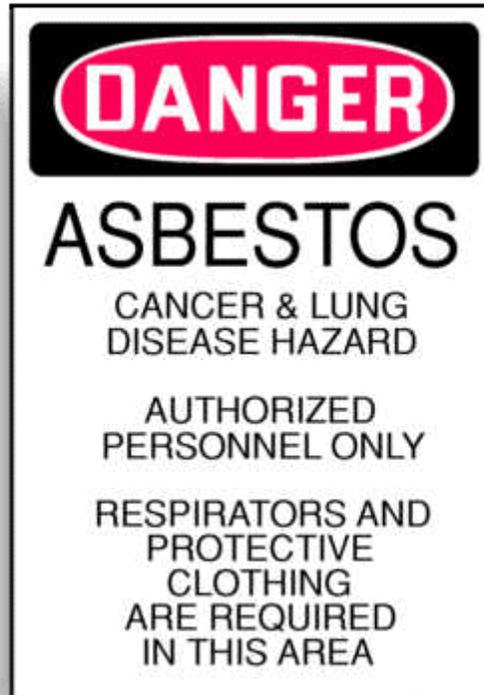


# ***Asbestos Abatement at Duke***



## ***A Guide for Duke University Employees***

***Occupational and Environmental  
Safety Office  
Box 3914  
684-5996***

If you are reading this, it is likely that an *Asbestos Abatement* will be conducted adjacent to your work area in the near future. While not comprehensive, this brochure attempts to answer many of the common questions that employees may have under these circumstances. If any of your concerns are not addressed here, please don't hesitate to contact us at 684-5996.

### ***Where is the asbestos?***

Asbestos-containing materials have been installed in many of the buildings at Duke. The most common use is in thermal insulation on steam and water pipes, floor tile, and acoustical plaster. If your building was built before 1980, there is a good chance that it was built with asbestos-containing materials.

### ***Are these materials dangerous?***

Asbestos-containing materials are not hazardous when they are undamaged. When disturbed, these materials might release small, microscopic fibers into the air, which, when present in high quantities, may pose a hazard to building occupants. Because these materials are likely to be damaged by renovation activities, they are “***abated***” first.

### ***What is an asbestos abatement?***

Abatement includes all actions to control any hazards posed by the presence of asbestos-containing materials. These actions may include removal, enclosure, or encapsulation of the materials. At Duke, removals are usually done in conjunction with planned renovation or construction projects. Enclosure or encapsulation are used to stabilize damaged asbestos in areas not undergoing renovation.

### ***How is an abatement done?***

All abatements are done in a controlled manner, in three phases: preparing the area; removing, enclosing, or encapsulating the asbestos; and clearance.

Preparation involves setting up an ***enclosure***; sealing up all windows, doors, ventilation ducts, and other opening with plastic sheeting. Additional plastic sheeting may be used to cover all perimeters of the abatement, or if the abatement is small, a mini-enclosure may be set up. The area is then placed under ***negative-pressure***, or vacuum, to ensure that no air will leak from the controlled area into adjacent areas. Airlocks are then set up to allow abatement workers to enter and exit safely, as well as for bagged waste to be removed for disposal. Prior to any work with the asbestos material, OESO conducts an inspection of the enclosure to verify that it is adequate for the planned abatement.

Actual removal is done mostly by hand to minimize the disturbance of the material. Water is used to wet the material to even further reduce its potential to release fibers. Special vacuum cleaners with High Efficiency Particulate Air (HEPA) filters are used to capture any of the fibers that may have been released. After the gross removal of the asbestos-containing material is done, a final cleaning of all surfaces within the enclosure is done using wet sponges or rags, and HEPA vacuums.

Clearance includes all activities, done by OESO, to ensure that the area is safe for reoccupancy.

The first step is a visual inspection to verify that no asbestos or residue remains in the area. If such materials are found, the final cleaning described above is repeated.

When an acceptable visual inspection is achieved, air monitoring is then done to verify that airborne fiber levels meet the North Carolina criteria for public occupancy. This limit is 0.01 fibers per cubic centimeter (f/cc) of air. If analytical results show fiber levels above 0.01 f/cc, the area is re-cleaned and re-monitored until airborne fiber levels are below the limit.

After laboratory analysis shows acceptable airborne fiber concentrations, the abatement is considered officially over, the enclosure is then taken down, and the area is reopened for renovation or reoccupancy.

***It sounds like you are doing a lot to ensure that the abatement area is safe, but how about the occupied areas adjacent to the abatement?***

The enclosure as well as the abatement work procedures are planned to ensure that any person outside the controlled area of abatement will not be at risk. To validate this, OESO conducts daily inspections of the enclosure as well as air monitoring in all areas adjacent to the abatement.

***We've been told that the floor tile in our building contains asbestos, yet some of it was recently removed without any of the controls you describe. Why was this done?***

Some materials, like floor tile are *non-friable*, that is, they are unlikely to release fibers when removed with minimal breakage. We sometimes employ an infrared heat machine to warm the tiles, which then are easily removed whole without releasing fibers into the air. This method does not require setting up a controlled area.

***I've heard that even low levels of asbestos exposure can cause disease. Am I really safe with all of the above controls?***

While there is some uncertainty regarding the potential for asbestos-related disease at low exposure levels, both the North Carolina Department of Environment, Health, and Natural Resources and the Federal EPA consider exposures below 0.01 f/cc to present no significant risk.

If you do have any concerns about the health risks of an asbestos abatement near your work area, feel free to call the Employee Occupational Health & Wellness (EOHW) at 684-3136.

***Who can we call for additional information?***

If you need information about the scheduling of the asbestos abatement, you may call the Project Manager:

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If you have any questions about the abatement activity, the daily air monitoring, or any other safety issue, please call the Occupational and Environmental Safety Office at 684-5996.