

Specific requirements for sampling and analysis in schools were given in the Asbestos-in-Schools rule (40 CFR Part 763, Subpart F). Although legal requirements for investigating the presence of asbestos apply only to schools, the procedures are broadly applicable to any building. A detailed sampling and analysis plan must be developed and implemented. Quality assurance procedures must be employed for reliable results. A recommended approach is described in the Asbestos-in-Schools rule and in "Asbestos-Containing Materials in School Buildings: Guidance for Asbestos Analytical Programs" (Lucas, et al 1980a). Key elements are provided here to help the reader understand sampling and analyzing bulk material for asbestos. (Further information on sampling and analysis is available by calling the EPA Technical Information Service, (800) 334-8571, or the Regional Asbestos Coordinators.)

- Appoint a sampling and analysis coordinator to oversee the entire sampling and analysis operation and quality assurance program. The asbestos program manager typically assumes this role.
- Identify homogeneous sampling areas of friable material. These are areas covered with material that has the same appearance and texture. If an area that appears homogeneous is known to consist of different materials, perhaps due to remodeling or building expansion, the area should be subdivided for sampling purposes. Damaged or exposed parts of pipe and boiler insulation should also be considered distinct "sampling areas."
- Collect at least three core samples of material in each homogeneous sampling area. The method of random selection should be used to identify locations where samples will be taken. Random selection will assure an established statistical level of confidence in the estimates of asbestos content. (Specific procedures for designing the sampling plan are given in the EPA guidance document referenced above [Lucas, et al 1980a] and in a companion document [Lucas, et al 1980b].) Note that pipe and boiler insulation in good condition should not be sampled, since sampling requires breaking the insulation jacket.
- Develop a quality assurance program following recommendations in the guidance document (Lucas, et al 1980a). A key feature is the use of split samples, that is, duplicate samples from the same sampling location, to confirm laboratory analyses.
- Submit samples to a qualified laboratory for analysis. A list of laboratories that participated in the EPA quality assurance program for bulk sample analysis appears in the document noted above (Lucas, et al 1980a). The list is periodically updated. A current list and additional information on laboratory qualifications may be obtained by calling the EPA Technical Information Service, (800) 334-8571, or the RACs. The approved method of bulk sample analysis for asbestos is polarized light microscopy. A supplementary method, X-ray diffraction, may be required in certain cases. The laboratory report should include:
 - (1) sample identification number;
 - (2) analytical method used;
 - (3) sample appearance and treatment;
 - (4) type and percent of both asbestos and nonasbestos constituents;
 - (5) method of quantification; and
 - (6) analyst's name.

The type of asbestos mineral present may be important information when the asbestos-containing material is eventually removed.

- To determine whether the samples have more than 1 percent asbestos, the laboratory results should be interpreted using statistical procedures described in previous EPA guidance (Lucas, et al 1980a).