

- Removal of all types of asbestos except amosite must be initiated only after the material is treated with a solution of water and a wetting agent to reduce fiber release. Some types of amosite-containing materials will not adsorb either water or water amended with the wetting agent suggested by EPA (50% polyoxyethylene ester and 50% polyoxyethylene ether) in Part 1 of the initial guidance document (USEPA 1979). Wetting agents should be tested on the material for adsorption. If the material won't adsorb the wetting agent, a dry removal will have to be undertaken using Type C respiratory protection for the workers. EPA must approve all dry removal operations.
- Friable asbestos-containing material must be disposed of in "leak-tight containers," typically 6 mil polyethylene bags. Bags frequently are placed in 55-gallon drums for additional protection.
- OSHA procedures for worker protection and decontamination, as well as for measurement of airborne asbestos, must be strictly followed. While not required by law, EPA procedures for work area containment are likewise a prerequisite for safe removal operations (see Chapter 9 and Appendices A and B, Part I of previous EPA guidance [USEPA 1979]).

Research on asbestos removal plus EPA's experience with removal activities in schools since 1979 have pointed up several issues that require more attention when removal is the chosen course of action.

- Surveillance of work practices at the worksite by a representative of the building owner is absolutely necessary. Like any other rapidly growing industry, asbestos removal has attracted companies with varying experience and competence. Even reputable firms sometimes subcontract work to expedite jobs. Relaxed enforcement of rules and incomplete adherence to contract specifications occur all too frequently. A worksite supervisor representing the building owner, and with authority to stop removal activities whenever circumstances dictate, should be present at all times. The program manager's technical expert is a logical choice for this role.
- A breach in the containment barrier is a significant exposure hazard for building occupants and should be repaired immediately. Using negative pressure systems together with HEPA filtration (that is, low volume exhaust fans with HEPA filters) to move air from within the work area to outside the building may give some protection in the event of a breach. Appendix F contains a summary of specifications for negative air systems.
- Another problem observed at several worksites concerns dismantling of containment barriers at the end of the removal operation. Sealing tape used to attach the plastic sheets to walls and ceilings frequently cannot be removed without peeling paint from these surfaces. It may be wise to include the cost of repainting all walls (and ceilings, if appropriate) in estimates of asbestos removal costs.
- Disposal and transport of removed material has been a problem. Containers full of wet material are very heavy and difficult to transport. Spilled material both in and outside the work area has been observed. Care must be exercised in sealing and handling these containers. Disposal sites may be difficult to locate. Some states require a disposal permit before removal begins.
- Amended water (water with wetting agents) from spray operations may leak through the polyethylene sheets and damage floors, especially tile and wood. A cost-effective solution might be double plastic sheets carefully sealed.