### 3.2 Assessing the Potential for Exposure to Asbestos

If the sampling and analysis of bulk material show that asbestos is not present, there is no need for further action except to document the findings. A positive finding indicates the need for a thorough assessment of the potential for exposure to airborne asbestos, followed by the consideration of appropriate corrective measures. This section addresses various approaches to assessing the need for corrective action.

#### 3.2.1 Principles of Fiber Release, Suspension, and Transport

As noted in the previous section, asbestos fibers can be released spontaneously from asbestos-containing material in the normal process of the material's aging and deterioration. This process can be accelerated by air movement or vibration. In addition, a dramatic increase in the rate of fiber release may accompany disturbance of asbestos-containing material. Once released, either by deterioration or by sudden damage, asbestos may remain airborne for extended periods of time. The small size of asbestos fibers facilitates their suspension by regularly fluctuating air currents. Even when the fibers eventually settle during quiet periods (for example, weekends), they are readily re-suspended by the normal activities of building occupants and custodial and maintenance personnel.

Asbestos fibers are transported from the point of release to other locations within the building largely via airstreams from air circulation equipment. Measurements of asbestos concentrations in school buildings suggest that fiber levels can be elevated throughout a building even though the area of fiber release is restricted to a few rooms (Constant, et al 1982).

#### 3.2.2 Estimating the Potential for Fiber Release

One approach to assessing the need for corrective action is to estimate the likelihood of fiber release from materials in which asbestos has been confirmed. This approach uses subjective assessments of asbestos-containing materials, and assumes relationships between airborne asbestos levels and characteristics of these materials. The approach has the advantage of practicality and, in certain circumstances, may reveal the potential for future fiber release even when actual levels of airborne asbestos are relatively low.

The following sections discuss the use of various factors to assess characteristics of asbestos-containing materials. Their use both as qualitative descriptors and in numerical rating schemes is evaluated.

##### 3.2.2.1 Proposed Exposure Indices

Several lists of assessment factors have been proposed for the purpose of estimating the potential for fiber release from asbestos-containing materials. These include the EPA factors as presented in Chapter 7, Part 1, of the initial EPA guidance document (USEPA 1979a), the U.S. Navy's asbestos risk evaluation procedure (Lory 1980), the Toronto Board of Education index* (Pinchin 1982), and the U.S. Department of Education's asbestos scoring system as published in the FEDERAL REGISTER (46 FR 4536). Each list contains factors relating to the current condition of the material, the amount of asbestos present, and the vulnerability of the material to physical damage and erosion by air movement. Guidance is provided for scoring

*This is also known as the "modified Ferris Index."



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