

CRS Report for Congress

Received through the CRS Web

Asbestos: Federal Regulation of Uses

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Summary

Asbestos poses substantial risks for those who work with it and for the general public, but it continues to be used because of its unique properties. This report describes the federal laws and regulations that seek to assure an adequate level of safety in the use of asbestos. These involve the control of workplace exposures in general industry, construction, and mining; and protection of the public health and general environment under such laws as the Toxic Substances Control Act and the Clean Air Act. This report will be updated only as major changes are proposed in the regulatory framework.

For almost a century it has been known that asbestos is a hazardous material, although the degree of its danger has only gradually come to be fully recognized. When inhaled, very fine fibers of asbestos lodge deeply in the lungs, causing irritation, breathing difficulties, and, in some cases, cancer. The more common types of face masks and respirators do not provide protection. Asbestos continues to be used because of its extraordinary properties of strength, flexibility, and resistance to heat, fire, and corrosion. Protective standards have been adopted and progressively tightened over the years, but human exposures will continue to occur through legacy buildings and equipment and due to contamination in other mineral products. Moreover, cases of asbestosis, lung cancer, and other diseases will be emerging for years to come because they occur after a long latency. In recent years, there have been at least 1,700 deaths per year in the United States associated with the related lung diseases of asbestosis and mesothelioma.¹ This report describes the controls and protections currently in place, with some background on how these were developed. It does not discuss the large body of litigation for damages that has led to Supreme Court decisions, prominent corporate bankruptcies and congressional bills to resolve these claims.²

¹ U.S. Department of Health and Human Services, National Institute for Occupational Safety and Health, *Work-Related Lung Disease Surveillance Report* (Cincinnati: NIOSH, 1999), Tables 1-1 and 7-1.

² See CRS Report RL32286, *Asbestos Litigation: Prospects for Legislative Resolution*, by Edward Rappaport.

Occupational Safety and Health Administration

The first controls over asbestos exposure were implemented in the occupational arena, beginning with a permissible exposure level (PEL) equivalent to 177 fibers per milliliter (f/ml) of air³ recommended by the American Council of Government Industrial Hygienists (ACGIH) in 1946. Soon after the agency's formation in 1971, the Occupational Safety and Health Administration (OSHA) promulgated a standard of 5 f/ml. This was overturned by a court due to procedural shortcomings, but OSHA subsequently implemented standards that progressively lowered the limit from 2 fibers in 1976 to 0.2 in 1986 and 0.1 in 1994. OSHA maintains that the latest PEL is about as low as could reliably be measured. It was projected that it would limit asbestos-related mortality to about three chances in 1000 of asbestos-related death if a worker was so exposed throughout a working life. (The ACGIH-recommended limits vary according to the particular crystalline forms and currently are: 0.2 f/ml for the crocidolite form, 0.5 for amosite, and 2.0 for all other forms of asbestos.)

In addition to quantitative limits on exposure, the OSHA standards⁴ give direction on the control measures to be used and mandate a number of work practice and informational rules. Among these are water spraying around work materials, exhaust ventilation, controlled access to work areas, provision of respirators, protective clothing, showers, etc., and medical surveillance. An appendix to the general industry standard lays out procedures specifically for brake and clutch servicing operations, as asbestos is still commonly used in such friction products. The standard is thus very thorough, but some have questioned whether many employers are complying with it. In a series of articles in the *Seattle Post-Intelligencer* beginning in November 2000,⁵ it was reported that two-thirds of the dust samples collected in auto repair shops contained asbestos, with concentrations averaging around 20% — much higher than the level at which protective suits and respirators would be called for. The newspaper also indicated that OSHA has done very few inspections aimed at this particular problem.

Mine Safety and Health Administration

Dangers to mine workers come under the jurisdiction of the Mine Safety and Health Administration (MSHA). MSHA's PEL for asbestos, 2 fibers/milliliter,⁶ has been in

³ This and the other quoted limits pertain to a time-weighted average over an eight-hour workshift. The OSHA standard allows short "excursions" beyond these levels, but only to a specified extent.

⁴ General industry is covered by 29 CFR Section 1910.1001, construction (including renovation and demolition) by Section 1926.1101, and shipyards by 1915.1001. State and local government workers in states that do not have OSHA State Plans are covered under the general industry rule by reference, under EPA's authority (40 CFR 763-120). A short summary of the rules, compiled by the American Federation of State, County and Municipal Employees, is available at [<http://www.afscme.org/health/faq-asb2.htm>].

⁵ Posted at [<http://seattlep-i.nwsourc.com/asbestos>].

⁶ MSHA inspectors assume a 25% margin of error in the sampling and measurement process, in
(continued...)

effect since 1978, and is at the level in effect under OSHA's standard from 1976 through 1986. In 1989, MSHA began a generic rulemaking to establish or revise PELs for over 700 airborne contaminants, including a proposed limit on asbestos of 0.2 f/ml. However, at about the same time, a similar generic rulemaking by OSHA was overturned in court, in a ruling holding that full scientific and economic documentation must be provided for each regulated substance. Since then OSHA has completed separate rulemakings for asbestos, but MSHA has not.⁷ In March 2002, MSHA issued an advance notice of proposed rulemaking; in its semi-annual regulatory agenda of December 2004, the agency indicated that a proposal would be out by March 2005. In the meantime, the agency's policy is to inform miners and operators when concentrations above 0.1 f/ml are found, and encourage them to take precautionary measures.

Environmental Protection Agency⁸

The Environmental Protection Agency (EPA) regulates the use of asbestos in several contexts under the authority of various laws, as follows.

Toxic Substances

Under the Toxic Substances Control Act (TSCA, 15 U.S.C. Section 2601-2692), a few uses of asbestos have been banned outright, such as in flooring felt and insulating paper products. In 1989, EPA invoked TSCA in a regulation to ban virtually all uses of asbestos, but the attempt was overruled by the court of appeals in the *Corrosion-Proof Fittings* case (947 F.2d 1201).

Section 6 of TSCA was predicated on the view that a comprehensive and preventive approach could be taken to regulate the use of toxic substances. Rather than deal after the fact with emissions and wastes, EPA was authorized to study virtually any chemical used (or proposed to be used) in commerce and prescribe measures that could range from labeling to outright prohibition. At the same time, TSCA recognizes the value of chemical products and requires the government to take these into account. Risks are to be controlled only to the extent that they are "unreasonable," and controlled by the "least burdensome" of the options available. Moreover, EPA is required to support its rulemaking by "substantial evidence," a more exacting standard than applies under other environmental statutes. The court in *Corrosion-Proof Fittings* found that the agency had failed these standards. It faulted EPA's risk-benefit analysis, particularly its allegedly inadequate consideration of the costs and risks of asbestos substitutes in each type of use. Although the court suggested that less burdensome measures could have been chosen, EPA has not proposed any partial solutions, such as prohibition of use in friction

⁶ (...continued)
effect allowing a limit of 2.5 fibers.

⁷ U.S. Department of Labor, Office of Inspector General, *Evaluation of MSHA's Handling of Inspections at the W.R. Grace & Co. Mine in Libby, MT*, OIG Report No. 2E-06-620-0002, Mar. 22, 2001, p. 8.

⁸ For further information on EPA programs concerning asbestos, consult Claudia Copeland, Specialist in Environmental Policy, CRS Resources, Science, and Industry Division.

products. Its only subsequent action was to prohibit new uses (not in commerce before 1989).⁹

School Buildings

Under the Asbestos Hazard Emergency Response Act (AHERA, P.L. 99-519 as amended by P.L. 100-368), school administrators are to have their facilities inspected to determine whether asbestos is present in such form as to present a danger. If so, they are to develop a plan for its containment or removal in accordance with standards issued by EPA (40 CFR Section 763.80 through 763.99). Thus, AHERA does not mandate any particular quantitative standard or even a set of procedures, but requires school districts to consult with qualified experts and deal with each situation as appropriate. This is because:

“After gaining some experience with asbestos abatement, it became apparent that removal was only warranted when asbestos is exposed and friable (crumbly), causing fibers to be released into the air. In many cases, it seems, asbestos abatement was doing more harm than good”¹⁰

The EPA standard (at Subsection 763.90(i)) requires that air in the affected areas be tested after the completion of any remediation project and that airborne asbestos be less than certain quantitative limits. For example, the limit for relatively small areas is 0.01 f/ml, much lower than the OSHA or MSHA limits. The intent is not really a quantitative limit, but “zero tolerance” (i.e., that the airborne concentration be less than the smallest reliably measurable quantity). This is deemed practicable for a building application but not for an industrial process, because the building situation is static: Any asbestos present is sealed in with other building materials that are presumably undisturbed until there is building renovation or repair or long-run deterioration.

Air Quality

Asbestos has been designated a “hazardous” pollutant under the Clean Air Act and EPA has issued a regulation (40 CFR, Part 61, Subpart M) to control emissions into the surrounding air from manufacturing, construction, demolition, and waste disposal. The standard is qualitative, prescribing methods to be used and, in general, that there should either be no visible emissions of dust or that fabric filtration systems be employed. (In this and other regulations, EPA has defined “asbestos containing material” as that which contains more than 1% asbestos. This has allowed hazardous exposures to occur with the use of some products such as Zonolite (t.m.) insulation made with vermiculite.)¹¹

⁹ The Consumer Product Safety Commission has banned the use of asbestos in two products: patching compounds and artificial fireplace embers (16 CFR, Sections 1304,1305).

¹⁰ Mark R. Powell, *The 1983-84 Suspensions of EDB under FIFRA and the 1989 Asbestos Ban and Phaseout Rule under TSCA*, Washington, Resources for the Future, Discussion Paper 97-06, Mar. 1997, p. 21.

¹¹ Michael Moss and Adrienne Appel, "Company's Silence Countered Safety Fears about Asbestos," *New York Times*, July 9, 2001, pp. A-1, A-10. Also, U.S. Governmental Accountability Office, *EPA's Cleanup of Asbestos in Libby, Montana, and Related Actions to* (continued...)

Water Quality

Under the Clean Water Act, EPA has promulgated limits affecting plants making asbestos products or processing the material (40 CFR Part 427). These define, for each type of plant, the allowable quantities of effluent per unit of product. For most asbestos operations, the criterion of “best available technology economically achievable,” as well as the performance standard for new facilities, is zero discharge (“no discharge of process waste water pollutants to navigable waters”).

Under the Safe Drinking Water Act, maximum contaminant levels in public water systems have been set for dozens of substances. The standard for asbestos (at 40 CFR 141.62) is 7 fibers per milliliter (where only fibers longer than 10 micrometers are counted).

Solid Waste

Under Subtitle D of the Resource Conservation and Recovery Act (RCRA — 42 U.S.C. 6901-6992), disposal of asbestos-containing material is regulated by EPA as a non-hazardous waste. These regulations establish general siting and operational guidelines for disposal facilities, without specific provisions for asbestos. However, under RCRA’s delegation of authority to develop more specific regulations, some states have designated asbestos as hazardous and issued specific requirements for its disposal.

Mining wastes are exempt from RCRA under a 1986 determination by EPA. The agency concluded that, although mine wastes can pose significant risks, regulation under RCRA would be inadvisable due to the difficulty of dealing with the large volumes and because the sites are usually in sparsely populated, arid areas.

Asbestos is considered “hazardous” for purposes of the Superfund law, which provides for clean-up of many types of contaminated sites, such as mines.¹² However, Superfund does not apply to materials incorporated into the structure of buildings.

Recent Developments

Calls continue to be made for a comprehensive ban on the use of asbestos. In 2002, the European Parliament adopted such a directive, to be incorporated in the law of all its member nations by April 2005.¹³ In the 108th Congress, a stand-alone bill, S. 1115 (Murray et al.) would, among other things, mandate a ban similar to the one proposed by the EPA in the 1980s, allowing exemptions for products where no reasonable substitute is available. Much the same language was included as Title V in S. 2290, the most prominent of the bills to resolve asbestos liability litigation.

¹¹ (...continued)

Address Asbestos— Contaminated Materials, GAO-03-469, Apr. 2003.

¹² See CRS Report RL30798, *Environmental Laws: Summaries of Statutes Administered by the EPA*, coordinated by Martin R. Lee.

¹³ See [<http://www.eu.int/scadplus/leg/en/cha/c11134.htm>].