

A Scientific View of Asbestos

by Brooke Taylor Mossman, PhD

One must identify the type, location and condition of asbestos-containing material before deciding on a plan of action. The concentration and size of asbestos fibers in the air are also important in determining whether a risk exists, as fibers must be airborne and of a certain dimension before they can enter the respiratory tract and cause disease.

Asbestos Type and Disease Potential
Various types of asbestos fibers are chemically and physically different. Chrysotile, the type of asbestos accounting for 90-95% of the world's production of asbestos, is the type most commonly found in buildings. It is a pliable, curly fiber which is thought to degrade in the lung over time. In contrast, other types of asbestos, classified as amphiboles, are rod-like fibers which can penetrate the deep lung and remain durable over time.

Three diseases have occurred in workplace settings after intense exposure to asbestos. These include: asbestosis, lung cancer, and mesothelioma.

Asbestosis Asbestosis is a nonmalignant disease which is preventable in workers who adhere to Occupational Safety and Health Administration (OSHA) regulations.

Lung cancer The overwhelming majority of lung cancers in the U.S. population are caused by smoking and radon exposure. Lung cancers are increased in asbestos workers who smoke, but are rare in nonsmokers. At low levels of exposure, it is uncertain whether asbestos contributes to lung cancer. For these reasons, cessation of smoking is the best approach to reduction of lung cancer in the general population.

Mesothelioma Mesothelioma, a rare tumor in that approximately 1,500 to 2,000 cases are diagnosed annually in the U.S. in comparison to 130,000 lung cancers, is the most relevant disease to be considered when evaluating health risks due to asbestos exposure in buildings. Approximately 70-80% of mesotheliomas occur in persons with a history of exposure to asbestos. Mesotheliomas in asbestos workers occur after intense exposures to amphibole asbestos, and rarely after exposure to chrysotile. Thus, the determination of the type of asbestos in buildings is important when evaluating risk.

Fiber Size Data on asbestos workers and experimental models indicate that long asbestos fibers are those causing biological effects and tumors. Long fibers (> 5 µm in length) are most potent in the induction of mesotheliomas in animals and in cell transformation (i.e., a test indicating the malignant potential of fibers).

Condition of ACM Asbestos in buildings can be found behind walls or exposed as insulation, sealed in floors, wrapped around pipes, etc. Airborne fibers are released when in-place asbestos has deteriorated or is disturbed. Air levels of asbestos are generally very low in buildings (much lower than levels which gave rise to disease in the past) and comparable to amounts in outside air.

In-place asbestos warrants care and management, but the type of asbestos,

the size of the fibers and concentration in air must be assessed to determine whether it poses a risk to human health.

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Asbestos trust overhaul OK'd

Associated Press

NEW YORK — A federal judge yesterday approved the overhaul of the failing Manville trust fund to speed compensation to tens of thousands of asbestos disease claimants trapped in the nation's biggest worker health crisis.

In a 503-page opinion, U.S. District Judge Jack B. Weinstein renewed calls for congressional intervention to help end the decades-old legal battle, which he said could cost up to \$31 billion to resolve.

The judge also predicted that more companies beyond the dozen that already have declared bankruptcy protection would run out of money to meet asbestos liabilities.

"A national consolidation and integrated solution to the asbestos problem is needed if we are to adequately compensate the injured without destroying the effectiveness of much of our industry and some of our courts," Weinstein wrote.

The class-action settlement was proposed last November after the Manville trust, the nation's main mechanism for compensating asbestos victims, depleted its cash after making inaccurate estimates of claims and payments.

The trust was created in 1988 as part of Manville Corp.'s bankruptcy court re-

organization. Manville, once the nation's largest producer and supplier of asbestos and asbestos-containing products, sought bankruptcy protection in 1982 after it was inundated by asbestos claims.

Asbestos is an insulating material used widely in industry from the late 1800s until the 1970s.

Weinstein's ruling establishes a new method of paying workers or their families for ailments such as lung cancer caused by inhaling asbestos. It will

pay deserving claimants according to the severity of their illnesses, abandoning a first-come, first-served scheme that had depleted the trust's assets.

Under the restructuring, Manville will contribute an additional \$520 million to the trust over the next seven years and the trust will be free to sell a \$1.8 billion Manville bond to raise more cash.

Weinstein barred future lawsuits against the trust or the company and ordered tens of thousands of pending cases against the trust dismissed to reduce its legal expenses, which totaled \$50 million last year. That was achieved by combining all lawsuits against the trust into a single class action.



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