

U.S. firms still use it, despite its checkered career

The term "asbestos" comprises a group of impure magnesium silicate minerals—e.g., chrysotile, amosite—that occur in fibrous form. Reports of the toxic properties of asbestos date back to the 1920s in the U.S. However, it wasn't until the war broke out, when millions of workers were employed in shipyards insulating warships, that mass exposure to asbestos dust occurred in this country.

The material enjoyed wide popularity as an insulator in plants and buildings until 1970, when, in response to mounting evidence of its toxic properties, manufacturers stopped producing insulation made of loosely bound asbestos fiber.

The Asbestos Information Assn. says that the 3,000 asbestos products made today in the U.S. contain chemically and physically bound fibers that do not flake off. Current end-use breakdown: asbestos cement products (pipe, sheets), 22.4%; roofing products, 34.9%; asbestos paper, 4.3%; flooring products, 15.6%; packing and gaskets, 2.8%; thermal and electrical insulation, 1.2%; friction products (brake linings), 8.8%; coatings and compounds, 2.7%; plastics, 3.0%; textiles, 1.0%; and miscellaneous, 3.3%.

outbreak of asbestos-related diseases among World War II shipyard workers, explains that such a heavy exposure to asbestos existed before medical information revealed the dangers involved. Since then, millions of dollars have been spent in dust-control equipment by miners, millers, processors and manufacturers of asbestos.

In addition, note other asbestos-industry spokesmen, the type of products made in the past—e.g., asbestos thermal insulation—are no longer produced. They were phased out in the early 1970s, when the inherent hazards became apparent (see box).

Nevertheless, asbestos is still used as an insulator or fire retardant in more than 3,000 products ranging from water pipes to brake linings. And an estimated 500 million tons of the material are still around in plants and buildings throughout the U.S., according to Roy Steinfurth, administrator of the insulation health-hazards programs for the International Assn. of Heat and Frost Insulators and Asbestos Workers (Washington). Workers still exposed to asbestos are not adequately protected, charges Selikoff.

CIGARETTE LINK—Industry spokesmen also point out that exposure to asbestos alone may not be enough to cause lung cancer—the disease most commonly associated with the breathing of asbestos fibers—and that the connection between exposure and cigarette smoking has not been stressed enough. Says John A. McKinney, president of Johns-Manville Corp. (a

leading maker of asbestos products): "Clinical evidence shows that lung cancer in asbestos workers is virtually limited to those who smoke cigarettes, and that for practical purposes, lung cancer as an asbestos-related disease would not be a problem were it not for cigarette smokers."

AIA is currently on a vigorous campaign to persuade industry workers to stop smoking.

"There is no doubt that exposure and cigarette smoking have a synergistic effect," says an ACS spokesman, "but since so many workers included in past studies were smokers or ex-smokers, it's difficult to assess the risk to non-smokers."

The synergism is acknowledged in the WHO document. "Both cigarette smoking and exposure to asbestos independently cause lung cancer. However, when present together, they act in a multiplicative fashion." The NCI/NIEHS study agrees, and admits that it would be an error to attempt to blame each type of cancer mentioned in the report on an exclusive cause.

A NEW STANDARD?—The current flareup of the asbestos controversy is of more than marginal interest to OSHA, which has been trying to modify present rules governing exposure to the material (the agency is studying the NCI/NIEHS report).

For more than three years, OSHA has been pushing a proposal to reduce the permissible level of airborne fibers in the workplace from a present value of 2 fibers/cm³ to 0.5 fiber/cm³ on an

8-h, time-weighted basis, with a 15-min ceiling of 5 fibers/cm³. All limits apply only to fibers longer than 5 μ m. (NIOSH, which serves in an advisory capacity, has recommended a limit of 0.1 fiber/cm³.)

OSHA is currently evaluating the economic impact of the proposed standard, which is bound to affect both processing and use of the material.

Predictably, industry response to the idea has not been favorable. AIA calls the 0.5-fiber/cm³ limit "not technically feasible," and recommends instead the adoption of 2 fibers/cm³ as a permanent standard—one that can be realized at a reasonable cost for dust control.

On the other side of the spectrum, Roy Steinfurth, the asbestos workers' spokesman, feels that the only acceptable level is no asbestos exposure at all. The union official says that, even if the exposure level is reduced to 0.5 fiber/cm³, a worker would breathe in 4 million fibers in an 8-h workday. He estimates that as many as 50% of the members of his organization will eventually die of asbestos-related diseases.

In Europe, there is also a move to cut down on the exposure level, which has been 2 fibers/cm³ in the past few years. Italy, which lacks asbestos deposits, is attempting to phase out the material completely. Sweden moved to a 1-fiber/cm³ standard a year ago, and U.K. authorities are clamoring for a reduction of the present limit.

Critics who complain that the OSHA proposal does not go far enough in protecting workers also question why the standard should apply only to fibers longer than 5 μ m. Both Selikoff and Wagoner, for example, believe that the smaller fibers are even more active in producing lung tumors. And, according to Selikoff, "For each fiber longer than 5 μ m, there may be as many as 100 shorter ones."

OSHA's Health Standards Project Officer William Warren says that the 5- μ m length was the most practical alternative because detection equipment does not pick up anything smaller. Warren notes that available monitoring units detect only "from a few percent to 50%" of the actual number of fibers in a sample.

INSULATION DANGER—Spot checks with a number of U.S. insulation manufacturers turned up no one still making the asbestos-containing version. However, there are still tons of it