

Protecting The Asbestos Worker

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THE ASBESTOS INFORMATION SOCIATION NORTH AMERICA

Protecting The Asbestos Worker

The asbestos industry has invested millions of dollars in equipment and techniques to prevent the inhalation of asbestos dust by workers involved in the mining and milling of asbestos and in the manufacture of asbestos-containing products. Many more millions are earmarked today for continued improvement in the years to come.

Establishing Safe Dust Levels

When asbestos is mined, milled or processed in manufacturing plants, its minute dry fibers become airborne like dust particles. Long exposure to heavy concentrations of asbestos dust has been linked directly to an increased incidence of such diseases as pulmonary fibrosis (asbestosis), bronchogenic carcinoma (lung cancer) and mesothelioma among long time workers in the asbestos industry.

The first epidemiological study of the effects of asbestos dust on workers was reported in 1930. From that time on, it was generally recognized in industry that asbestosis serious enough to interfere with respiratory or cardiovascular functions could be prevented by reducing dust levels to a specified threshold limit value (TLV).

The American Conference of Governmental Industrial Hygienists (ACGIH) set the industry's first standard in 1938 by establishing a threshold limit value of five million particles per cubic foot of air. Independent research supported by the Johns-Manville Corporation concluded at about the same time that a TLV of one million fibers, 10 microns in length or longer, per cubic foot would be an adequate level for safe occupational exposure.

In 1968, the ACGIH established a new standard with a TLV of 12 asbestos fibers, five microns or longer, per cubic centimeter, and this was later modified in 1970 by reducing the time-weighted average to five fibers per cubic centimeter with a maximum or peak of 10 fibers per cubic centimeter at any one time.

This standard was adopted as a temporary measure in 1972 by the Occupational Safety and Health Administration (OSHA) of the U.S. Department of Labor, and is the present accepted level. However, on July 1, 1976 a new standard is scheduled to go into effect that will reduce the TLV to only two asbestos fibers, five microns or longer, per cubic centimeter on a time-weighted average.

Protecting the Worker

While there are many differences of opinion within the medical profession concerning the problem of asbestos and health, it is universally accepted that levels of asbestos dust in the workplace must be kept to a minimum.

Industry has attacked the problem in a number of ways. Typical methods implemented to control dust levels include sophisticated dust collection systems (which combine high-power exhaust fans, duct networks and high-efficiency filters); special methods of waste disposal; use of protective clothing and portable dust respirators; and innovative wetting and dampening methods which minimize dust generated during production.

The asbestos industry has developed a completely automatic fiber bag opening station that will permit workers to open the bags, remove the fiber, dispose of the bags and introduce fiber into the manufacturing process without creating dust. In general, greater use of automation is being sought throughout the asbestos industry to reduce dust levels and to minimize exposure of employees to airborne asbestos fiber.

Basically, the requirements of an effective dust control program are twofold: (1) Design fabrication processes and production equipment so as to minimize dust generation as much as possible; and (2) Implement highly organized programs of industrial maintenance (including hygiene surveys) to insure that safe levels are maintained. Periodic monitoring of dust concentrations should reveal dust levels which exceed the threshold limit value (TLV).

It is obvious that good preventive maintenance must go hand in hand with effective dust control measures if the standards recently announced by OSHA are to be achieved.

OSHA Regulations

On June 7, 1972, the Occupational Safety and Health Administration established by the Williams-Steiger Occupational Safety and Health Act of 1970 issued standards regulating asbestos dust exposures. These occupational standards deal with (1) permissible concentrations of asbestos fibers, (2) methods of compliance, (3) warning signs and labeling of potentially dangerous products, (4) monitoring of dust levels, (5) medical examinations for employees, and (6) recordkeeping by employers. These standards have one basic purpose — to protect employees from exposure to potentially hazardous amounts of asbestos dust in their workplace.

The major obligations placed on employers, and industry in general, by the new standards can be summed up as follows:

A. The employer shall maintain a healthy workplace, making sure that no employee is exposed to concentrations of airborne asbestos fiber in excess of established limits.

B. Where the exposure limits are exceeded, the employee shall be notified in writing of the situation by his employer and shall be informed of corrective measures being undertaken to reduce his exposure to a safe level.

C. Engineering controls and the implementation of safe work practices are the approved permanent methods of correction.

D. While corrective measures are being instituted, the employee shall be protected by other means, such as the wearing of an approved respirator provided by his employer, or by shift rotation.

E. The use of respirators or shift rotation to achieve control is not permitted except (1) during the time required to install engineering controls or implement safe work practices, or (2) in situations where such controls or practices are not technically feasible, or (3) in emergencies.

F. No employee shall be assigned to a task requiring the use of a respirator if his most recent yearly medical examination indicates that he would be unable to function properly while wearing one, or if the wearing of a respirator would endanger the employee's health or safety, or that of another workman on the job.

G. Special protective clothing, change rooms, and separate clothes lockers shall be provided for employees in certain situations.

H. The personal and environmental monitoring of a workplace shall be conducted by the employer to assure that the standards are being met. Employees shall have access to the results of the monitoring of their jobs.

I. Warning signs shall be posted at entrances to areas where dust levels are in excess of the standard.

J. Caution labels shall be placed on any finished asbestos-containing product that is likely to release free asbestos fiber in excess of the standard during handling, application, or fabrication.

K. The employer shall provide yearly medical examinations for employees exposed to concentrations of asbestos dust. Pre-employment and termination medical exams also are required.

L. Upon request, an employee's medical records will be made available to his family physician.

Other requirements included in the standard require that:

- (1) where respirators are permitted, they must be selected from among types approved by the U.S. Bureau of Mines or the National Institute for Occupational Safety and Health (NIOSH);
- (2) no asbestos cement, mortar, coating, grout, plaster or similar material containing asbestos can be removed from shipping bags or their containers without being either wetted, enclosed or ventilated;
- (3) insofar as practicable, asbestos must be handled, mixed, applied, removed, cut, scored, or otherwise worked in a wet state to reduce fiber emissions unless this would diminish the usefulness of the product;
- (4) hand tools that may produce or release asbestos fibers in excess

of the limits must be provided with local exhaust ventilation systems; (5) external work surfaces must be kept free of excessive accumulations of asbestos fiber; (6) waste must be collected in sealed impermeable bags or other closed, impermeable containers.

The Asbestos Industry's Commitment

The asbestos industry is firmly committed to the protection of its employees from health problems related to asbestos dust.

This commitment is evidenced by three major factors:

(1) **Past and Present Research.** The industry has spent millions of dollars to improve mining, milling and manufacturing methods during the past 30 years. Accompanying these advances have been increasingly safer working conditions in mines, factories and at job locations. This work continues unabated. The asbestos industry is working openly and enthusiastically with the Federal government and with independent medical researchers.

(2) **Cooperation in Setting Work-Safety Standards.** The asbestos industry has participated without reserve on government committees, investigative panels and at public hearings to review and improve work-safety regulations and asbestos control standards.

(3) **Implementation of Controls.** In the past decade, the industry has spent some \$110 million to implement work-safety controls in its mines and plants. At least another \$95 million will be spent during the next three or four years to upgrade facilities to meet the standards set by OSHA. Through its organizations — principally the ASBESTOS INFORMATION ASSOCIATION/NORTH AMERICA — the industry shares information on new control technology with its own members, its customers, and small producers and users not associated with its industry groups.

The asbestos industry also is striving for better communication between all concerned parties — workers and

their unions, government agencies, basic producers and end users. The ultimate goals are the reduction of dust to a minimum level, the protection of all workers from asbestos-related diseases, and protecting the general public from future exposures to levels of asbestos dust that could be potentially hazardous to health.