

Deadly Dust—Asbestos Endangers Brake Mechanics

Although much attention has been given recently to the dangers of flaking asbestos in schools and other public buildings, another source of contamination can be even more dangerous. That is the asbestos in automobile brake linings and clutch facings. If these are serviced improperly, millions of microscopic deadly fibers can be released into the air.

Asbestos is a mineral fiber that can cause asbestosis, scarring of the lungs; mesothelioma, a kind of cancer which is always fatal and usually kills people within two years of diagnosis; plus lung cancer and cancers of the voice box, stomach, and large intestine. Asbestos-related disease usually takes 15 to 30 years or more to show up, so it is easy to ignore the problem.

Studies have shown that nearly one half of mechanics who work for many years without proper control measures can develop asbestosis and many will get lung cancer. Mesothelioma can be caused by very low exposures to asbestos and has also occurred among brake mechanics.

Brake mechanics themselves are not the only ones in danger. The deadly dust can be spread throughout an entire garage, or work area, and asbestos dust can also be taken home on workers' clothes. Mesothelioma has killed spouses and children of brake mechanics.

SAFETY MEASURES

What NOT To Do

- **Compressed Air Hose:** DON'T BLOW IT! The worst thing a brake mechanic can do is to use a compressed air hose to clean drum brakes—16 million fibers per cubic meter of air can be released around the mechanic's face. (The new OSHA standard is 200,000 fibers per

cubic meter). Just hitting a brake drum with a hammer can release over a million asbestos fibers. Disc brakes release smaller, but still dangerous, amounts of dust. These fibers can be scattered around the garage and remain hazardous for months or years.

- **Wet Method:** Using a dry or wet rag or brush also can release millions of fibers into the air. When the wet rag dries or is shaken, asbestos is spread around the garage.

- **Liquid squirt bottles or solvent sprays:** can also scatter asbestos fibers. The water or solvent under pressure scatters much of the asbestos and also releases the fibers when it dries. Using a garden hose can prevent some brake dust from becoming airborne, but this can easily contaminate the garage floor.

- **Shop Vacuum:** Using a standard shop vacuum cleaner can spread more asbestos around the garage than a compressed air hose.

Doing It Right

- **Enclosed Vacuum Method:** Equipment is available that makes it possible to enclose a whole brake assembly, using a special box or drum with clear plastic windows and glove bags which fit tightly around the brake assembly. An air hose inside the box and drum is used for cleaning. An exhaust hose goes from the box or drum to a special HEPA (High Efficiency Air Particulate) asbestos vacuum cleaner. This is by far the safest way to work on brakes.

- **Special Areas for Brake Work:** No one should eat, drink, or smoke in an area where brake work is done.

- **Cleanup and Waste Disposal:** Dry sweeping or vacuuming (with a regular shop vac) should never be done, where asbestos dust is getting into the air or where it has gotten into the air in the past.



Wet mopping and disposal of the mop head is the only effective way to keep the dust from recirculating into the air. All waste that contains brake dust must be carefully disposed of according to federal and local regulations for asbestos materials.

- **Hygiene:** Workers should wash thoroughly before eating or going home. Showers are recommended. Clothes should always be changed before going home.

- **Respirators:** Respirators with a special HEPA canister filter and other protective clothing should always be used when working with asbestos unless the enclosed vacuum method is used. In addition, when the filters of the enclosed vacuum are being changed, it is recommended that respirators be worn. Before using respirators, workers must be trained, receive medical examinations, and be fit tested for the respirator.

More Information

Do not underestimate asbestos brake equipment: Clayton Associates Inc., (201) 938-6700; and Nilfisk, (215) 647-6420.

The Environmental Protection Agency has published a document called *Guidance for Preventing Asbestos Disease Among Auto Mechanics*, a fact sheet, and poster. Single copies of the document, poster, and fact sheet can be obtained by calling EPA at (800) 424-9065. An EPA video, as well as other information, can be obtained from the AFSCME Research Department. □

OSHA requires industry crackdown on asbestos

Part II: Manufacturers offer their opinions on OSHA's recent ruling and whether repair shops will be forced to comply.

In light of OSHA's recent move to phase out asbestos use in the workplace, some manufacturers are skeptical as to whether OSHA will crack down on those who violate the ruling.

Depending on an individual shop's exposure level, owners of automotive repair shops will be required to comply with a number of regulations, including employee monitoring, medical surveillance, engineering and work practice controls, housekeeping procedures, and employee training programs (see related story on following page).

In the meantime, business is booming for manufacturers of asbestos control equipment. Salesmen are being flooded with phone calls by shop owners and mechanics who are curious about the cost of such equipment and when compliance measures will be enforced.

According to Greg Rau, field sales manager for Hako Minuteman, sales for the company's asbestos vacuum system increased by 15 percent within the first month following the ruling.

Rau says the price of a complete Hako asbestos control system is \$1500. The system also provides additional features, allowing the system to be converted to a wet and dry standard tank vacuum for everyday vacuuming. It may also be converted for use on clutches.

One advantage of the Hako system, Rau says, is the vacuum motor which has never been contaminated by asbestos.

"No contaminants can pass through this motor," Rau says. "Besides, who would ever want to work on a vacuum

motor that's been exposed to asbestos?

Like the others, the Critical-Vac Filtration Company (C-Vac) is also doing big business as a result of OSHA's recent compliance standards. C-Vac manufactures replacement HEPA filters for use in Nilfisk vacuums and also plans to introduce a replacement HEPA filter for Hako Minuteman vacuums in the near future.

"The demand for our product will probably increase anywhere from six months to a year after we see an increase in vacuum usage," says Bob Hunter, president of C-Vac. "There's no question about it — the OSHA regulations will increase usage of those vacuums."

"From a business standpoint, we're pleased to see those regulations," Hunter continues. "Asbestos is a known carcinogen and there is a moral obligation to protect people from those hazards."

Hunter says he is curious as to when repair shops will start complying, and is concerned whether compliance will be



Asbestos removal is urged by OSHA

With new legislation on the books, repair shops will be required to comply with a number of regulations set down by the Occupational Safety and Health Administration (OSHA).

To meet the required exposure limit, employers are required to institute various engineering controls (see asbestos story, October) and supplement them with the use of respirator equipment, if necessary.

Although repair shops that perform brake work on a regular basis are required to comply with the 0.2 f/cc PEL, periodic monitoring, medical surveillance, housekeeping procedures and employee training is required when the exposure level exceeds the 0.1 f/cc "action" level.

Exposure monitoring. The primary purpose of exposure monitoring is to determine the airborne concentrations of asbestos and the extent that employees are exposed. It also allows the employer to evaluate the effectiveness of engineering and work practice controls, in order to determine whether additional controls are needed, such as respiratory equipment.

If exposure is above the action level (0.1 f/cc), periodic monitoring must be done every three months. If monitoring indicates that exposure is below the action level, monitoring may be discontinued. Monitoring must begin whenever there is a change in the production, process, control equipment, personnel or work practices that may result in new or additional exposure to asbestos.

Medical surveillance. The employer is required to have a medical surveillance program for employees who are exposed to airborne concentrations above the 0.1 f/cc "action" level. All medical

exams and procedures must be performed by a licensed physician and will be provided without cost to the employee. Preplacement exams will be required of new employees who are assigned to an occupation which exposes him/her to asbestos concentrations. The standard also requires that periodic medical examinations be scheduled once a year.

Housekeeping procedures. According to OSHA requirements, where vacuuming methods are necessary, HEPA filtered vacuuming equipment must be used. The equipment must be used and emptied in a manner that prohibits the re-entry of asbestos. The employer should also provide his employees with information on cleaning up asbestos spills, keeping work surfaces well-maintained and waste disposal procedures.

Employee information and training. The standard requires employers to inform their employees about the dangers of asbestos; the health effects associated with asbestos; the storage of asbestos; engineering controls and work practices associated with the employee's job assignment; the use of respirators, etc.

If exposure levels exceed the 0.2 f/cc PEL even when engineering and work practice controls are implemented, employers will be required to provide the following:

- Respiratory protection
- Protective work clothing and equipment
- Laundering and replacement of work clothing
- Hygiene facilities and practices. This includes change rooms, showers, lunchrooms, etc.
- Regulated areas

enforced by OSHA.

"Making sure these repair shops comply is a totally different aspect than just setting up the regulations," he says. "I think it will take quite some time for the various repair shops to comply."

Hunter expressed his concern about the future of non-asbestos, especially since asbestos use will one day be eliminated from all facets of industry. If asbestos use becomes obsolete, Hunter fears there will be no use for HEPA vacuums and, therefore, replacement of it.

"More non-asbestos brake linings being manufactured, they won't need equipment," Hunter says. "Asbestos use is declining."

With asbestos use on the downswing, manufacturers are becoming concerned about the effects of non-asbestos products. For example, Hako has added a feature on its asbestos-control system which allows for the vacuuming of non-asbestos brakes and linings.

"Non-asbestos related products have not been proven to be safe," says Rau of Hako. "I don't think OSHA has carefully looked at these products."

Rau refers to an EPA report revised in June, which suggests that enclosure systems should also be used to prevent the exposure of harmful materials in non-asbestos brake linings. Although a technician is at a much lower risk when working with non-asbestos brake linings,

non-asbestos materials may contain adhesives, toxic metals and other hazardous chemicals which can harm the body.

Still, while non-asbestos products continue to flood the automotive market, there are still a number of manufacturers who continue to manufacture brake products which contain asbestos. Some asbestos brake manufacturers have already begun to monitor exposure levels in the workplace to prevent their workers from being exposed to harmful levels during the manufacturing process.

Tom Wall, vice president and general manager of EIS Brake Parts, says the

company is already complying with OSHA's new manufacturing regulations. As stated in the June 20 Federal Register, manufacturers are required to perform initial monitoring of employees who are exposed to airborne concentrations above the 0.1 f/cc "action" level.

"We have been working toward OSHA's targeted levels for a long time and are already in compliance with the new standards," says Wall. "We go by the standard in detecting asbestos fibers and are in compliance at all four of the friction

plants that we operate. We have our people wear a device which accumulates and measures the exposure level and then we send it to the lab for a readout.

"We want to make sure — from a workers standpoint — that we're not exposing them to a situation considered to be hazardous."

Although EIS — a remanufacturer and assembler — still supplies some brake linings made with asbestos, the company does not mix asbestos fibers at its operating plants. The company currently of-

fers non-asbestos brake pads and shoes which supply 85 percent of the vehicles in use.

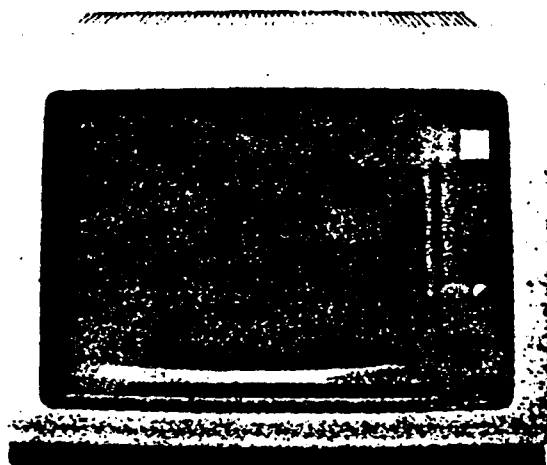
Like the asbestos-control manufacturers, Wall agrees it will be difficult for some shop owners to comply with the new regulations. He believes the service stations and general repair shops will not be able to afford some of the equipment needed to effectively measure particulate levels.

"I think it will be difficult to comply, but not at all impossible," Wall says. "I think the large high volume shops, the national chains and the brake specialists will comply, but general repair shops and service stations might not because of their volume of business."

Wall says repair shops will also have to figure in the cost of non-asbestos materials when performing brake jobs, which may eat into their profits.

"If brake jobs are \$59.95 per axle, other brake shops will be compelled to compete with those prices," Wall explains. "If they advertise at the \$59.95 price and have to purchase non-asbestos materials to do the job, it's going to cut into their profit."

500000 WARRANTY



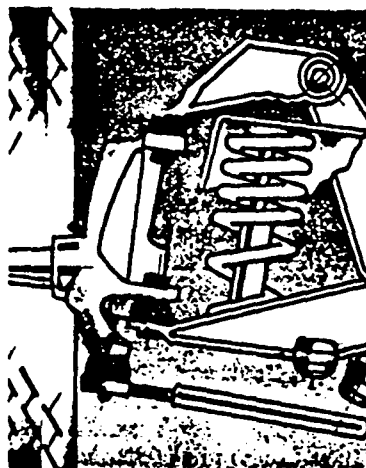
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