THE DANGERS OF ASBESTOS.

× Cancer

× Asbestosis

WORKERS BEWARE WITH :

- asbestos cement
- asbestos building materials
- vinyl-asbestos floortiles
- asbestos brake-linings and clutch facings
- asbestos insulation
- asbestos textiles
- asbestos paints
- transport and loading of asbestos on railways, in warehouses, and at the docks

Contents.

Introduction.

This is a health education booklet for organised workers. It is about asbestos - one of the most dangerous dusts that workers can be exposed to. The aim of the booklet is to provide asbestos workers with the information they need in the struggle for better working conditions.

The booklet is divided into three parts.

The first part describes the problem of asbestos - who works with asbestos and how it can affect their health.

The second part describes how workers can find out how bad the asbestos problem is in their workplace. This is done either by checking the air in the workplace or by having themselves properly examined by doctors.

In the final section, ways of solving the problem are described.

Workers cannot be sure that they are safe until they fully understand the problems facing them. This booklet aims to provide the information that workers need.

THE INDUSTRIAL HEALTH RESEARCH GROUP
THE HEALTH CARE TRUST

I. THE PROBLEM.

(1) What is asbestos?

Asbestos is a mineral rock from the earth like gold or coal. A lot of it is mined in South Africa - in the Northern Cape and the Eastern Transvaal. South Africa is the third biggest producer of asbestos from the mines. Nearly all of it is exported and this earns a lot of money for the mine-owners and the government.

(2) What is asbestos used for?

Most asbestos is used for making asbestos cement. Asbestos cement products include corrugated roofing, asbestos sheets for walls, gutters, ventilation pipes, sewerage pipes and water pipes. Asbestos cement is also used for insulation of hot water geysers and hot pipes. This is called lagging.

There are many other building materials which have asbestos in them. These include boards used for sound protection or sound insulation, bitumen which is used to make roofs waterproof, fireproof spray paint on metal surfaces and vinyl-asbestos floor tiles.

Asbestos is also used in the motor car industry. It is used to make brake-linings, clutch facings and battery boxes.

Asbestos is used in other industries where acid and heat resistant material is needed. It is also used to make asbestos rope and textile for heat insulation.

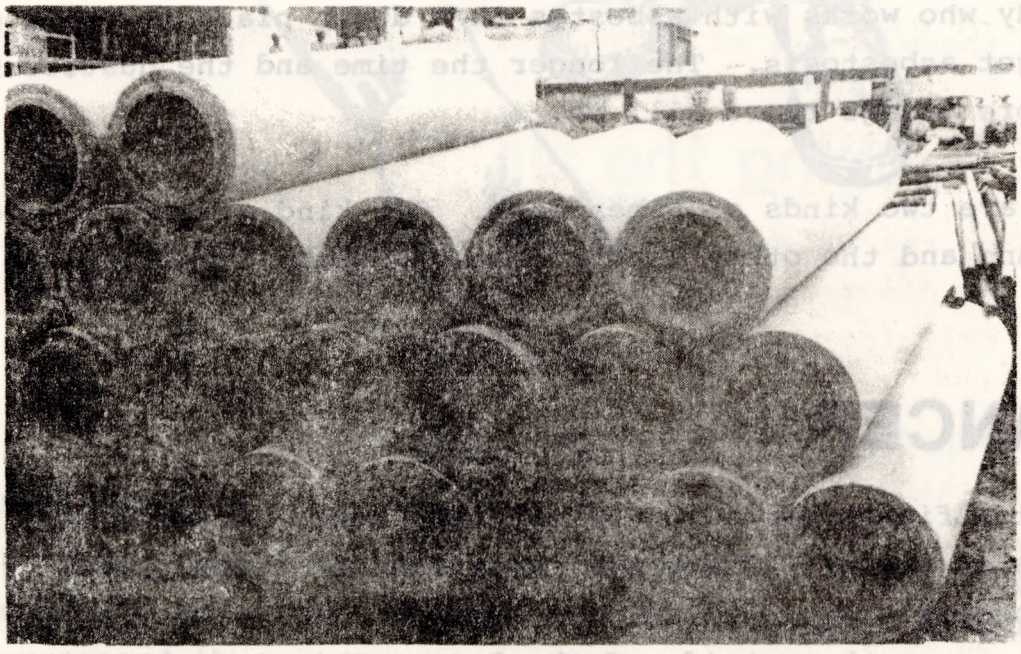
People who transport asbestos may also be exposed to enough dust to cause disease. This includes railway workers, warehouse workers and stevedores. Workers who mine and mill asbestos are also exposed to this harmful dust.

(3) What does asbestos do to your health?

When asbestos is used in production, it is broken up into very small pieces. These pieces are made up of fibres which are like very small threads. The very small fibres look like ordinary dust.

You can breathe these very small fibres into your lungs. Fibres that are too small to see are the most dangerous. They stay in your lungs and cause diseases.

Asbestos cement products:



ASBESTOS CAUSES TWO DIFFERENT TYPES OF DISEASES:

× ASBESTOSIS.

This disease is something like T.B. Asbestos fibres scar your lungs so that they cannot work properly. After a long time, a person with asbestosis finds it more and more difficult to breathe. If the scarring is very bad, the person can die from it.

THERE IS NO CURE FOR ASBESTOSIS!

Anybody who works with asbestos in a dusty place for long enough will get asbestosis. The longer the time and the dustier the place, the more damage there will be.

There are two kinds of asbestosis. One kind affects the outside of the lung and the other kind affects the lung itself.

× CANCER.

Asbestos fibres can also irritate the lung. After a long time, this can cause cancer. There are two different types of cancer caused by asbestos:

a) Cancer on the outside of the lung. This is called mesothelioma.
b) Cancer in the lung itself. This is called lung cancer.

CANCER CAUSED BY ASBESTOS ALWAYS KILLS THE PEOPLE WHO HAVE IT.

You can get mesothelioma after working with asbestos for only a very short time. There are people who have worked with asbestos for just one day and have got mesothelioma a long time later.

All the diseases caused by asbestos take a long time to show up. They may not show up until 30 years after you have worked with asbestos. By the time you feel sick, your lungs have already been badly damaged. By then it is too late to do anything about it. Getting away from the dust then will not help.

So it is important for workers to know about the dangers of working with asbestos and to make sure that they are protected long before they start feeling sick.

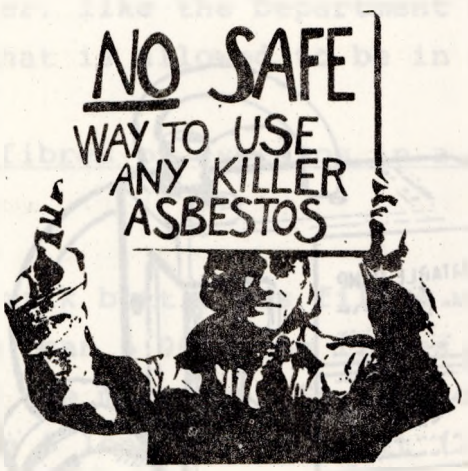
(4) What does asbestos do to your family's health?

It is not only the workers' health which is affected. Asbestos dust can get out of the factory and into the air. People who live in the area will then breathe it into their lungs. They can get asbestos diseases this way.

Workers also take the dust home on their clothes or on their skin. This is dangerous for their families.

(5) Other countries.

Workers in other countries feel very strongly that there is no safe way to work with asbestos. Workers in these countries have forced the employers and the government to think about stopping production of asbestos products and finding other things to use instead.



In Britain, for example, the government has agreed that there is no safe way to work with asbestos. As a result of this, factories in Britain (and in many other countries) which were making asbestos products have been moved to countries where the workers are not so strong, like South Africa and Mexico.

II. HOW BAD IS THE PROBLEM?

There are two ways of finding out how bad the problem of asbestos is:

(1) by measuring how much dust there is in the factory air;

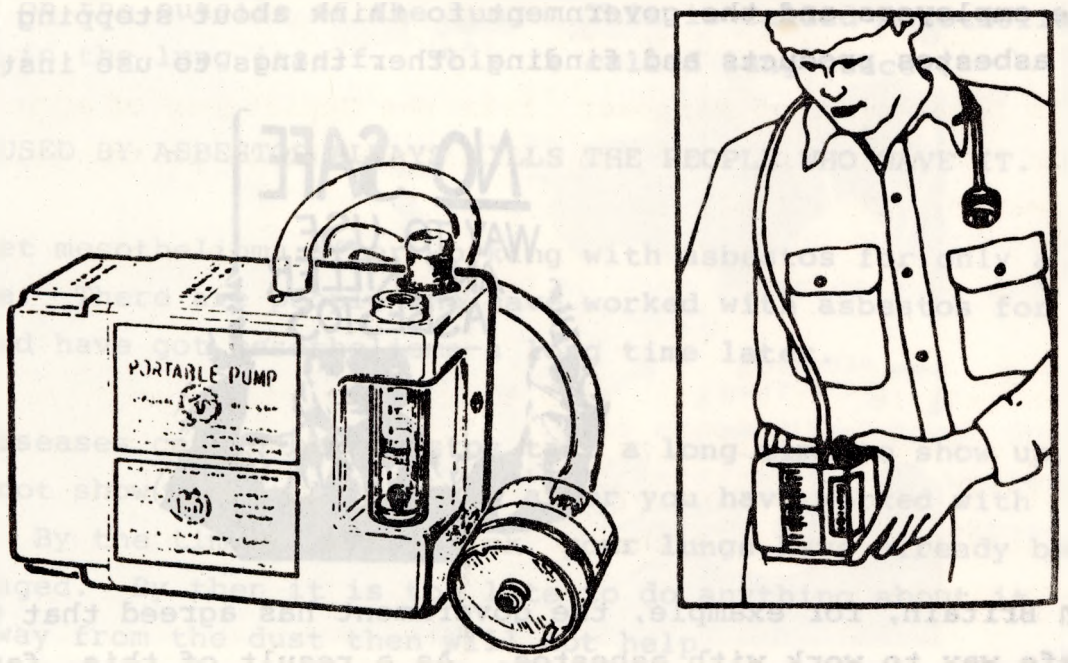
(2) by checking the workers.

Doing these things will show how dangerous the workplace is.

1. Checking the air.

Checking the air is the most important thing to do, because by the time the disease shows in the worker it is too late to help him or her. Checking the air is called MONITORING.

There are different machines to measure the dust in the air. The best machine is a small one which the worker carries around at work for a whole day so that it measures the dust wherever the worker goes. This will measure how much dust a worker breathes in a whole day. This machine is called a CASELLA PERSONAL SAMPLER.



The other kinds of machines that are used to measure the dust are not so good. This is because they measure the dust at only <u>one place</u> in a factory and they measure the dust for only a <u>short time</u>. They do not measure how much dust a worker breathes when he or she moves

around the factory while working for a whole day. The machine used in South Africa which works like this is called a KONIMETER.

ARE WORKERS SAFE IF THE AIR IS CHECKED?

Sometimes workers may think that because the employers are measuring the dust, they are safe. This is NOT true. Workers are only safe if there is no dust at all, and there is always some dust in asbestos manufacturing.

But it is better to have less dust than more dust.

* If you can see the dust on people's clothes or in the air at work during the day, it is really bad.
* If you can see the dust in the beam of a torch in a dark place, it is also very bad.
* Even if you cannot see any dust at all and the factory looks clean, there will be dust that you breathe in. This dust is the most dangerous.
  THE DUST THAT YOU CANNOT SEE CAN BE MEASURED BY THE MACHINES.
  That is why it is so important for workers to know the results of the measurements.

WHAT SHOULD THE RESULTS BE?

The Department of Manpower, like the Department of Mines, has a limit for the amount of dust that is allowed to be in the air that workers breathe. This limit is

5 long fibres of asbestos in a cubic centimetre of air.

For example, if a litre milk bottle was filled with factory air, there should be not more than 5 000 long fibres of asbestos in the bottle, when measured by the machine. So each cubic centimetre should not have more than 5 long fibres in it (1 litre = 1 000 cubic centimetres).

2. Checking the workers.

There are different ways in which workers can be checked for asbestos diseases.

BY CHEST X-RAY

This will show asbestos disease in the lungs before a worker feels sick.

How often should workers have an X-ray?

The Factories Act says that in factories which work with asbestos, all workers must have an X-ray before they start working. Workers should be X-rayed every year after that, so that they can see as soon as the disease starts to show.

The asbestos mines X-ray all their workers every year, but in factories, the inspector can decide when the workers must be X-rayed. Some big firms do X-rays but not every year. Many workers never have X-rays once they have started working.

The employer, factory doctor or factory nurse may tell workers that nothing is wrong with them. This can happen if the disease is not yet bad enough to make the workers feel sick.

Not feeling sick does NOT mean that the disease has not already begun to damage the workers' lungs. If there is any sign of the disease on X-ray, the workers must be told, even if they do not feel sick.

BY LUNG FUNCTION TESTS

In this test, the worker blows into a machine which tells how well his or her lungs are working. This machine is called a lung function machine.

There must be a lot of lung damage before asbestos disease can be found by this machine. Again, the worker may not feel sick even though this machine finds asbestos disease in the workers' lungs.

Some companies may decide to tell the workers that they are sick only when the damage to the lungs is bad enough to stop them working well. So it is important for workers to know these results too.

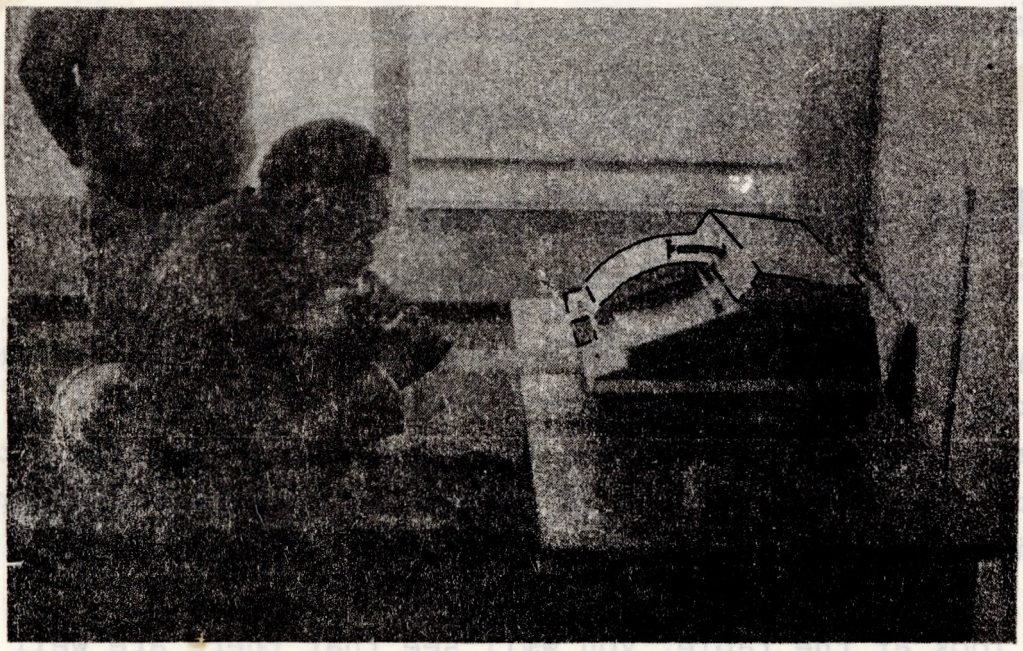
BY A DOCTOR'S EXAMINATION

A doctor can tell if workers' lungs are damaged by asbestos by examining them with a stethoscope. But by the time a doctor can find something wrong by just examining a worker, the worker will already be feeling sick.

ALL OF THESE CHECKS ONLY SHOW DISEASE IN THE WORKERS WHEN IT IS ALREADY QUITE BAD.

It is very important for workers to know the results of the tests done on them so that they can understand the danger in the work.

Lung function tests:



III. SOLVING THE PROBLEM.

How can workers be protected against asbestos?

Whether workers will be protected against asbestos, and how good this protection will be, depends on their organised strength. The best protection against asbestos is not to work with asbestos at all. Other things can be used instead of asbestos. This is called SUBSTITUTION.

But if you have to work with asbestos, how can you be protected?

1. What could be used instead of asbestos?

You may be told that there is nothing as good as asbestos to use in products like asbestos cement, etc. This is not really true. There are other less dangerous things which are just as good. Asbestos is used because it is cheaper or because most companies which make asbestos products also own the asbestos mines.

If you look at the table, you will see that there are well known products which can be used instead of asbestos, especially in asbestos cement. Most of the substitutes are safer than asbestos and so they should be used instead, where possible. But, THIS DOES NOT MEAN THAT ALL THE SUBSTITUTES ARE COMPLETELY SAFE.

Fibre substitutes like glass fibre may cause similar problems to asbestos. Only non-fibre substitutes or textile fibres will not cause these sorts of problems.

2. Enclosure.

The best way of keeping dust away from the workers is by having the dusty jobs done in a separate place where workers do not go. This separate place could be a separate room or an enclosed cubicle. For example, asbestos bags can be opened completely by machines.

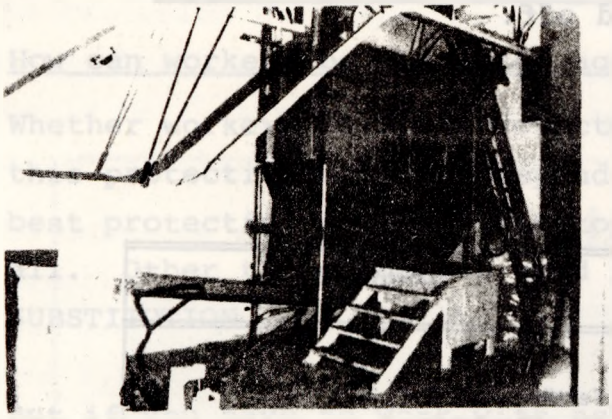
Dusty jobs could also be done by machines which are completely enclosed. This is called ENCLOSURE. For example, asbestos can be mixed by machines which are completely enclosed. In some countries, there are even machines which can saw asbestos sheets automatically. They do not need a worker to handle the machine and the sawing part of the machine is completely closed off.

Substitution:

Product containing asbestos	Purpose of use	Substitute
Asbestos textile	Clothing, protective against heat and fire	Textile fibre fabric Glass fibre fabric Cotton entwined fabric Wool fabric Heat resistant leather
Asbestos cement	Fire protection walls	Building sheets containing no asbestos on the basis of gypsum, aluminium silicate, expanded clay or mineral wool Dual-walled metal sheets, with inter-layer of mineral wool
	Pipes for water, air, etc.	Metal Plastic
Asbestos spray	Protection against fire, heat and noise	Spray cleaner of Portland cement, with granulated mineral fibres Fire protective measure of Portland cement, rock wool and X-ray amorphous silica dioxide
Asbestos pulp	Sealings and packings	Aluminium silicate Glass fibres Textile fibres
Asbestos as an admixture	Automatically heated feed-in	High alumina raw materials
	Filters	Textile fibres Glass fibres Mineral fibres Aluminium silicate
	Paint, floor covering, putty and adhesive substances	Glass fibres Textile fibres

Enclosure:

1.



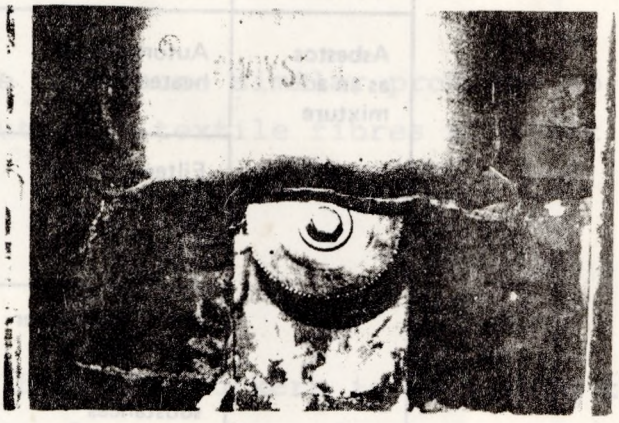
2.

These pictures show how work with asbestos can be enclosed to control the dust.
Picture No.1 shows the box inside which asbestos bags are opened and the asbestos is mixed with cement.

No.2 shows the asbestos bag being pulled into the box. The box has rubber doors to keep the dust in.

No.3 shows what happens inside the box. The bag is cut open.

3.



3. Local exhaust ventilation.

The second best way of protecting workers is for the dust to be sucked away by a special vacuum on the machine. This vacuum works all the time that the machine works. It gets rid of the dust before the worker can breathe it. For example, if a worker is cutting asbestos board with a circular saw, there should either be a vacuum attached to the saw, or a hood over the saw to suck up the dust. If a worker has to drill holes in asbestos sheets, the drill should either have a vacuum to suck the dust or a hood over it.

4. Wetting the asbestos.

Another way of keeping dust away is by wetting the asbestos so that dust does not come off. For example, water can be poured into bags of asbestos before they are opened.
BUT, this will NOT get rid of all the dust. This is one way of SUPPRESSING DUST.

5. Personal protection.

As we have said, the BEST protection is for the job to be done automatically by the machine or for a vacuum to be built into the machine. But in South Africa, these machines are not usually supplied. If they get anything at all, workers in South Africa usually only get masks. This is called PERSONAL PROTECTION.

MASKS ARE NOT A GOOD KIND OF PROTECTION.
It is important for people to understand that masks can even be worse than no protection at all. If workers think that masks protect them, but the masks are really useless, this can be very dangerous.

There are many reasons why personal protection is not good enough:

* Because the asbestos fibres are very small, they can get through the filters of all masks unless the air the worker breathes through the masks comes from outside the factory.

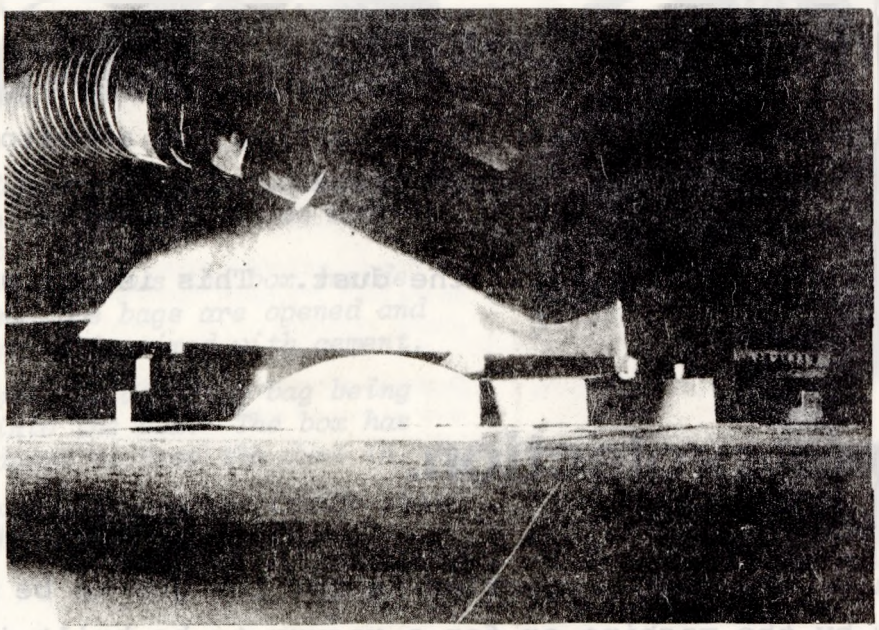
  So masks with tanks or air hoses are the only ones which will protect the workers.

* Workers who have masks on can still get asbestos dust on their clothes and bodies, even if the masks have tanks or air hoses.

  A plastic suit is the only way to stop getting dust onto the workers. The suit must cover the whole body.

* The masks and suit or overall must fit closely everywhere. This is difficult to arrange because every person's face is different, but the masks are all the same.

Local exhaust ventilation:

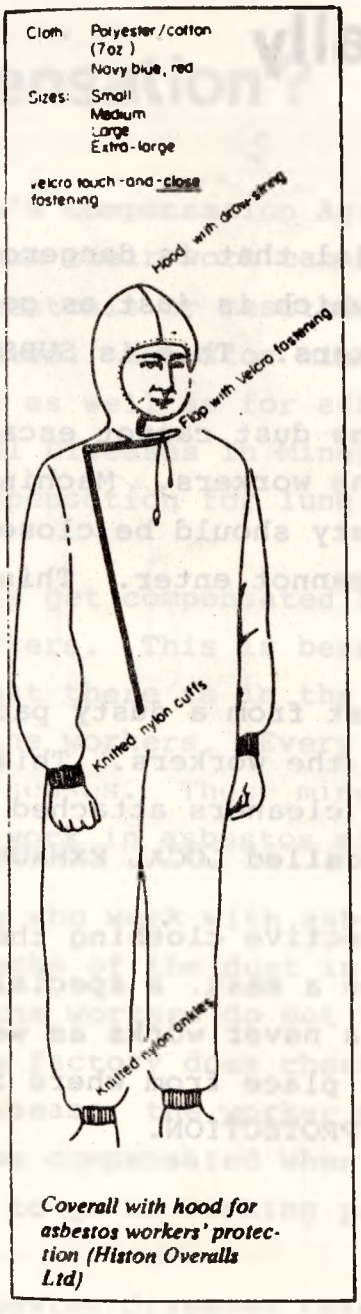


These photographs show how the dust from a saw used to cut asbestos is sucked away by local exhaust ventilation.

* All of this personal protection makes working difficult and uncomfortable for the workers.

* It is also difficult to clean overalls or suits without causing dust. Brushing or blowing the suit clean with an air hose causes a lot of dust. Only washing in a shower will help remove some of the dust, or vacuuming the clothes while they are still being worn by the worker.

Personal protection:



Coverall with hood for asbestos workers' protection (Histon Overalls Ltd)

* People who clean the overalls of asbestos workers also need protection.

So it is much better for the dust to be stopped where it comes from.

PROTECTION AT SOURCE IS BETTER THAN PERSONAL PROTECTION.

People who clean filters of extractor fans which catch asbestos or get rid of the dust picked up by vacuum cleaners must also be protected.

What to fight for to really protect workers.

THE SAFEST is to stop using a material that is dangerous. There may be another material which is just as good and which is not dangerous for workers. This is SUBSTITUTION.

THE NEXT BEST is to make sure that the dust cannot escape from a part of the work and get to the workers. Machines or parts of the work which are dusty should be closed off in a space where the workers cannot enter. This is called ENCLOSURE.

THE NEXT BEST is sucking away the dust from a dusty part of the work before this gets to the workers. This is done by extractor fans or vacuum cleaners attached to or near the dusty job. This is called LOCAL EXHAUST VENTILATION.

THE LEAST PROTECTION comes from protective clothing that the workers must wear. This could be a mask, a special overall or suit, goggles, etc. This never works as well as removing the dust in the place from where it is coming. This is called PERSONAL PROTECTION.

Things that are no protection at all.

Other ways of getting rid of dust cause more trouble than they give protection to workers. An extractor fan in a large room near a window in the factory will just blow the dust around the room and make things worse. This is called GENERAL EXHAUST VENTILATION. Sweeping with a broom makes a lot of dust. An ordinary vacuum cleaner (not attached to the machine causing the dust) can also spread the dust around the factory, especially if it has a filter which the very small fibres can get through.

Compensation?

The Workmen's Compensation Act says that workers who get certain diseases from their work can be compensated. Workers in factories who get asbestosis or mesothelioma from working with asbestos can be compensated. Asbestos mine-workers can get compensation for lung cancer as well as for asbestosis or mesothelioma under the Occupational Diseases in Mines and Works Act. Factory workers do not get compensation for lung cancer.

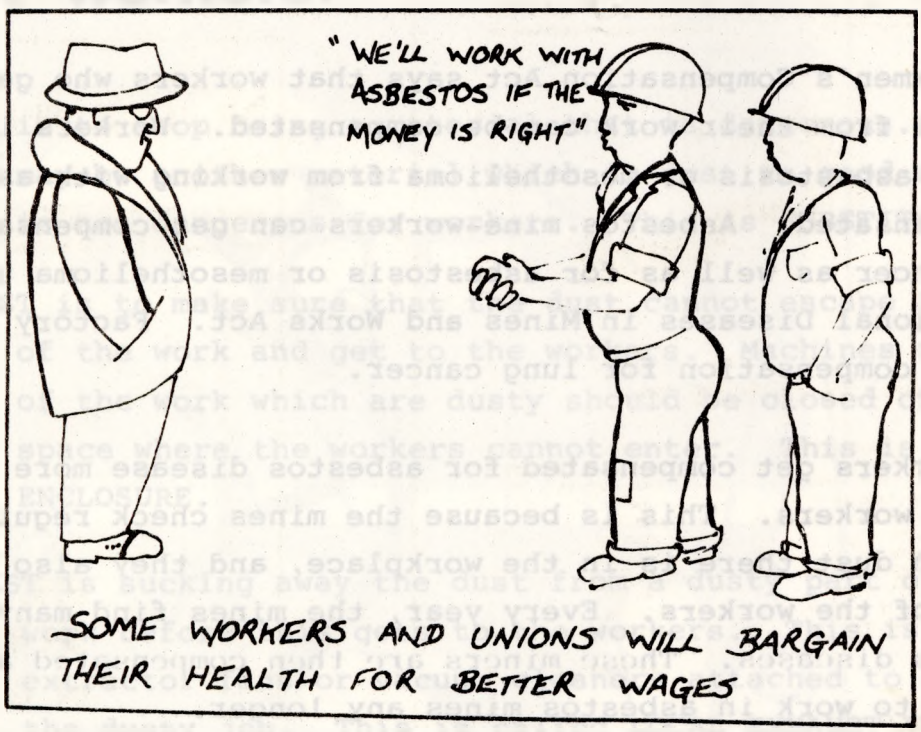
Mine-workers get compensated for asbestos disease more easily than factory workers. This is because the mines check regularly on how much dust there is in the workplace, and they also check the health of the workers. Every year, the mines find many miners with asbestos diseases. These miners are then compensated and are not allowed to work in asbestos mines any longer.

For workers who work with asbestos in factories, there are not such regular checks of the dust in the air or the health of the workers. So, often the workers do not know what is happening to their lungs. Even if the factory does check, and finds that a worker has asbestos disease, the worker may stay in the same job. He or she will only be compensated when the disease is so bad that it is impossible to go on working properly.

Because asbestos diseases take a long time to develop, the biggest problem is that a worker may be working somewhere else when the disease is found. A doctor who does not know that the worker worked

with asbestos may think it is some other disease like T.B. Even if the doctor does know it is asbestos disease, it will be difficult to prove where the worker got the disease. The worker will only get compensation if he or she can prove that the disease came from the work.

If workers can get compensation for sickness, that is better than nothing. But there is no substitute for good health. It is much better to get protection so that you never get sick, than to wait for compensation once you are already sick. Compensation is always less than the wage you would earn if you could work. So you lose your health and you lose money too.



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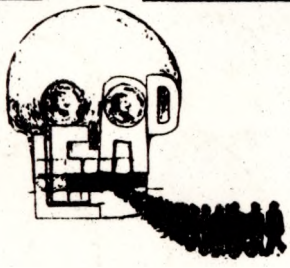
WORKERS BEWARE!

LEAD IS A POISON.

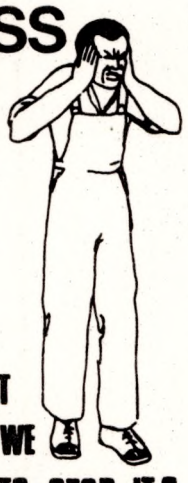


WORKERS BEWARE IN:

MOTOR VEHICLE ASSEMBLY
PANNEL BEATING
BATTERY MANUFACTURE
BATTERY RECOVERY
LEAD CHEMICAL PRODUCTION
SOLDERING
LEAD BURNING
LEAD SMELTING
LEAD CASTING
LEAD ALLOY PRODUCTION
GLASS INDUSTRY
PRINTING
WIRE ROPE PRODUCTION
GOLD REFINING
PAINTS
POTTERY
CERAMICS
ENAMELING
EXPLOSIVES
PLASTICS
RUBBERS
INSECTICIDES

AND OTHERS..

NOISE IN THE FACTORY CAUSES DEAFNESS



WHAT CAN WE DO TO STOP IT?