

ASBESTOS AWARENESS

Leader's Guide

Structure and Organization

Information in this program is presented in a definite order so that employees will see the relationships between the various groups of information and can retain them more easily. The sections included in the program are:

- Asbestos: "miracle" and menace.
- The health effects of asbestos.
- Types of asbestos hazards.
- Thermal System Insulation.
- "Surfacing materials", flooring and ceiling tiles.
- Protective equipment and safe work practices.
- Decontamination and medical surveillance.

Each of the sections covers important information in one topic area, providing employees with general knowledge about working safely in environments where they may encounter asbestos or asbestos-containing materials.

Background

As hard as it is to believe today, at one time people called asbestos the "miracle material". Not only is it a natural mineral that can be dug out of the ground by the ton, but asbestos is lightweight, fireproof, chemical-resistant and bacteria-resistant. It works well for soundproofing, and is a great insulator against heat, cold and electricity.

But while this "miracle material" seemed so beneficial for so many things, it turns out that it isn't good for people. In fact, asbestos can cause serious illnesses, even kill us. And it can still be found in many homes and commercial buildings.

Employees need to understand the asbestos hazards they may encounter in their workplace, the federal laws and company policies that are designed to protect them from these hazards, and what they can do to prevent exposure to asbestos and go home safe at the end of every day.

Objectives

This education and training program is designed to present fundamental information on asbestos, its hazards and how to avoid them. Upon completion of the program, employees should be able to:

- Understand the health risks posed by asbestos.
- Understand the purpose of OSHA's Asbestos Standard.
- Understand the purpose and content of an Asbestos Management Plan.
- Be able to recognize asbestos hazards in their workplace.
- Know the three types of asbestos-containing materials they are most likely to encounter.
- Know how to respond to any asbestos hazards they encounter on the job.
- Know safe practices for cleaning up and disposing of asbestos-containing materials.
- Know how to decontaminate themselves and their equipment from asbestos safely.

Reviewing the Program

As with any educational program, you should go through the entire program at least once to become familiar with the content and make sure that it is consistent with company policy and directives.

As part of this review process, you should determine how you will conduct your session. The use of materials such as handouts, charts, etc., that may be available to you needs to be well thought out and integrated into the overall program presentation.

Structuring the Presentation

In conducting this education session, you should proceed with a friendly and helpful attitude. Remember that the "trainees" are looking to your experience and knowledge to help them relate to the situations shown in the program. It is important to let the trainees interact with you and each other during the training session. Stimulating conversation within the group is one of the best things you, as the presenter of the program, can do to help everyone get as much as possible from the session. Be alert for comments that could help in this area in future sessions and make note of them.

As the presenter, you also should:

- Keep the session related to the topic of identifying and dealing safely with asbestos hazards on the job.
- Relate discussions to your company's operations, procedures and responsibilities.
- Keep any one person or small group of employees in the session from doing all the talking.
- Get everyone involved. Ask questions of those who don't participate voluntarily.
- Clarify comments by relating them to the key points in the Program.

Use the "**Outline of Major Program Points**" as well as the information included in the quiz, as the basis for answering any questions. If you don't know the answer, say so. Tragic results may occur should you provide incorrect or inaccurate information. Remember, this is a positive program on asbestos awareness. Make sure your attitude and words reflect this, and that the emphasis is always on providing the information needed by the attendees to keep themselves and others safe from asbestos hazards.

Outline of Major Program Points

The following outline summarizes the major points of information presented in the program. The outline can be used to review the program before conducting a classroom session, as well as in preparing to lead a class discussion about the program.

Introduction

As hard as it is to believe today, at one time people called asbestos the "miracle material".

Not only is it a natural mineral that can be dug out of the ground by the ton, but asbestos is:

- Lightweight.
- Fireproof.
- Chemical-resistant.
- Bacteria-resistant.
- Non-conductive.

As a result, it worked well for soundproofing, and was a great insulator against heat, cold and electricity.

But while this "miracle material" seemed so useful and beneficial for so many things... it turns out that it isn't good for people.

In fact, asbestos can cause serious illnesses, even kill us. And it still can be found in many homes and commercial buildings.

Before its health hazards were fully understood, asbestos was used in literally thousands of products, from...

- Piano parts to electric blankets.
- Carpeting to toasters.
- Record albums.
- Theater curtains.
- Buttons on clothing.
- Automobile brake pads.
- ... all sorts of things.

Because of its unique qualities, asbestos found many uses in the construction industry as well. It was:

- Incorporated into plaster and wallboard, to add strength and stiffness.
- Sprayed, troweled or otherwise applied to walls, ceilings, and steel girders as fire and sound-proofing.
- Wrapped around pipes, boilers, heating ducts and other utility systems as insulation.

Of course, when the health risks of asbestos became known, the products that contained asbestos were taken off the market.

But the asbestos that had been "built in" to so many building materials has been much tougher to remove.

- This is why asbestos-containing materials (ACMs) can be found in many buildings even now.

Because of this, the Occupational Safety and Health Administration (OSHA) created a standard to protect workers, including maintenance, engineering and custodial staff, who could be exposed to asbestos on the job.

Employee training plays an important part in the Asbestos Standard. If there's risk of exposure to asbestos in your workplace, you will receive training in:

- How exposure to asbestos can affect your health.
- Where asbestos-containing material (ACMs) and materials that may contain asbestos are located in your facility.
- How to recognize asbestos hazards.
- How to deal with these hazards safely.

Characteristics of Asbestos

Most rocks and minerals break down into tiny particles, like grains of sand.

- But asbestos breaks down into fibers, like strands of rope.

Asbestos fibers can be so small that they are invisible to the naked eye.

- You need a very powerful microscope to see them.
- But don't let their small size fool you.

Asbestos fibers are as strong as steel, and if they find a way into your body, they can seriously affect your health.

Because asbestos fibers are so small, they're basically invisible, and they're so light that once they are stirred up, they can float in the air for a long time.

- This means that you can easily inhale asbestos fibers without even knowing that they are there!
- Once asbestos fibers get into your lungs, they can do severe damage.

Health Effects of Asbestos

While you don't experience the effects immediately, the fibers irritate lung tissue and can eventually lead to a disease known as "asbestosis".

- Asbestosis makes it hard to breathe, and leads to the enlargement of the heart, which can ultimately be fatal.

Long-term exposure to asbestos fibers can cause cancer in the lungs as well, and can also lead to a rare cancer known as "mesothelioma", which affects the tissues that line the chest and abdomen.

Asbestos fibers are especially hazardous to people who smoke.

- Cigarette smoke breaks down the lungs' natural defenses against the foreign substances that get into them.
- Smokers are over 50 times more likely to become sick after long-term exposure to asbestos.

If you're a smoker and you are going to be working around asbestos, you should seriously consider kicking the cigarette habit.

- Your employer can provide you information on effective programs that can help.
- Talk to your supervisor to find out more.

But your lungs aren't the only place where asbestos can cause trouble.

- Fibers that get into your mouth or that land on food or drink can be swallowed, and lead to cancers of the digestive tract.

Obviously asbestos is a significant health hazard, and it's important to know how to protect yourself from it.

While asbestos can have serious and often fatal effects on your health, there are ways you can avoid these hazards.

- You can make a good start by understanding how and where you're likely to encounter asbestos in your facility.

Plans for Reducing Asbestos Exposure

If there is asbestos or asbestos-containing materials in your workplace, your employer will have conducted air monitoring tests to determine how much asbestos contamination, if any, exists in the air.

- If the tests reveal unsafe levels of airborne asbestos, OSHA requires your facility to create a written control program that will reduce your asbestos exposure to safe levels.

The Environmental Protection Agency (EPA) requires schools to develop and implement a written "Asbestos Management Plan" if ACMs are even present on the site, regardless of airborne asbestos levels.

These programs serve as blueprint for keeping you, your coworkers and others safe from asbestos hazards.

- Your facility's plan is available to all employees, and you should take the time to become familiar with it.

The plan will include a detailed list of the places where you might encounter asbestos in your facility.

- These areas must also be identified with warning signs or labels.
- If you don't find a sign or label posted where you think asbestos may be present, notify your supervisor immediately.

Friable vs. Non-Friable Asbestos

Materials that contain asbestos are divided into two general categories, "friable" and "non-friable."

- "Friable" materials can be easily damaged, broken apart or crumbled, which can release dangerous asbestos fibers into the air.
- "Non-friable" materials are more difficult to damage, but can also release asbestos fibers.

When asbestos-containing materials are undamaged, they are not releasing asbestos fibers into the air, so there is no threat to your health.

The health hazards begin when the materials are bumped, scraped, peeled, water damaged or otherwise disturbed, and release their asbestos fibers.

- It's crucial for you to be able to recognize damage when you see it, and know what to do if you find it.

There are three types of asbestos-containing materials you are most likely to encounter:

- Thermal System Insulation.
- "Surfacing materials".
- Floor and ceiling tiles.

Thermal System Insulation (TSI)

Thermal System Insulation (TSI) is the most common type of "friable" asbestos material.

- You will find TSI on boilers, utility pipes, ductwork and HVAC systems.

Be on the look-out for places where:

- The insulation is torn.
- The material has been gouged out or peeled off.
- Water, oil or other substances have caused it to deteriorate.

Remember, even a small tear can create a serious hazard.

Also, look for dust or debris that has built up on floors or other surfaces. It's a clue that some type of damage may have occurred nearby.

If you do find damage, you should act immediately to reduce the potential for exposure to asbestos:

- Secure the area if possible.
- Post a sign warning people to stay away.
- Then notify your supervisor or your facility's safety or environmental manager so they can arrange for repair and clean-up.

You should take these steps even if you aren't sure that the material contains asbestos.

- With asbestos, the cautious approach is always best, because you're better safe than sorry.

If the repair and clean-up of asbestos-containing material needs to be done before you can start your work, talk to your supervisor.

You should never handle or remove any asbestos- containing material yourself unless you have been authorized and are properly trained and equipped for the work.

- Normally, other qualified people will be brought in to do the job.

At one time, asbestos-containing materials were sprayed troweled, or otherwise applied to girders, ceilings and walls as fireproofing and soundproofing, and sometimes just for decoration.

Surfacing Materials

Because surfacing materials that contain asbestos are almost always friable, they are prone to damage.

- They should be handled with extreme caution.

Over time, surfacing ACMs tend to peel and fall away from the surfaces they were applied to.

- This produces dust and debris that contain asbestos fibers.
- If you encounter this type of material, do not try to clean it up by sweeping or shoveling.
- This could easily stir up asbestos fibers into the air, where you could inhale them.

Instead, you should:

- Secure the area immediately.
- Post warning signs.
- Report the problem.

Your supervisor will arrange for the material to be cleaned up and disposed of safely.

Floor & Ceiling Tiles

Another place you may sometimes find asbestos is right under your feet.

- Floor tiles can contain asbestos, and so can the "mastic" or glue that was used to fasten them down.
- Although floor tiles are non-friable, they can release fibers if they're damaged.
- Cuts, grooves, scrapes and cracks in a tile are all signs of potential problems.

If you notice damaged floor tiles you should again:

- Secure the area.
- Post warning signs.
- Notify your supervisor.

When you are working around your facility, do not start grinding, cutting or breaking apart any floor tiles before you know whether they contain asbestos.

- Those activities can all release asbestos fibers, so you should first determine if there's an exposure risk.

If you need to strip a floor's finish, use "wet methods."

- Dampen the floor with water so asbestos fibers are less likely to get into the air.
- Make sure you're using a low abrasion pad, and keep the stripping machine's speed below 300 RPMs.

Some ceiling tiles can contain asbestos as well, and what's more, they're generally friable.

- You should treat all ceiling tiles as if they are asbestos-containing materials until it has been determined that they are not.
- Check for broken corners, water damage or other problems.
- Handle the tiles carefully.

If you find damage, take the same steps you would take for any other potential asbestos exposure hazard.

Personal Protective Equipment

Depending on the job you do, you may be asked to assist in the repair and clean-up of asbestos at your facility.

- Getting this type of work done safely begins with putting on the proper protective gear.

You will need to wear a respirator that uses special filters to prevent you from inhaling any asbestos fibers.

Before starting to work you should undergo a "fit test", to make sure the respirator gives you complete protection.

- It needs to be the right size and shape for your face.
- If there are any gaps between your face and the respirator mask, asbestos fibers could "leak" through.

Once you've got a good fit, you'll be trained in:

- How to put the respirator on correctly.
- How to clean and maintain it.
- How and when to change its filter cartridges.

And even though asbestos isn't a "skin-contact" hazard, you should also wear disposable overalls.

- They make it possible for you to "clean yourself off" more effectively and conveniently when you're done.

Safe Work Practices

There are some important things to remember about the clean-up process itself.

Never use compressed air to clear away substances that may contain asbestos. Use "wet methods" instead.

Moisten the materials with water at least three times:

- Before you disturb them.
- During the clean-up process.
- While you're finishing up afterwards.

You should do this whether you're using a broom, shovel or vacuum.

Never use an ordinary vacuum cleaner for doing asbestos clean-up.

- Even with industrial or shop-grade type machines, asbestos fibers can still get through the filters and be blown out with the exhaust.
- You can prevent this by using a vacuum fitted with a "High Efficiency Particulate Air" ("HEPA") filter.
- HEPA filters are designed to catch and trap asbestos fibers safely.

To eliminate asbestos contamination as completely as possible, you should give the area a final "wet wipe" with a damp cloth after vacuuming.

- The cloth that you use for the wet wipe will contain asbestos fibers afterwards, so be sure to dispose of it appropriately.

OSHA standards require proper bagging and labeling of all asbestos-containing materials.

- Be sure to use "asbestos disposal bags" that are specially made for this purpose.
- You will need to fill out a "generator label" with the name and address of your facility, and attach it to the disposal bag, so others can tell what's in the bag and where it came from.

If an asbestos disposal bag that you're using gets torn:

- Seal the tear with tape immediately.
- Place the damaged bag inside a new bag and seal it.
- Put a filled-out generator label on the new outer bag.

And remember, asbestos is a regulated waste, so you can't just put it in the trash, or bury it out back.

- It must be disposed of in a licensed landfill.

OSHA safety standards also require regular monitoring of asbestos levels in the air, so you may be asked to wear an "air sampling device" during your clean-up activities.

To collect the samples, an air pump will be strapped to your waist and a "cassette" will be taped to the front of your shoulder (this will "catch" any asbestos fibers that are in the air).

- These samples help your facility to make sure that appropriate precautions are taken to protect you and your coworkers while you work in areas that may have ACMs.

Decontamination

After doing any work with asbestos-containing materials, you must thoroughly clean and "decontaminate" your PPE, and yourself.

- A special decontamination and changing area will be set up for this.
- These areas are usually isolated, to prevent any spread of asbestos fibers back into the facility after clean-up.

Never eat, drink or smoke in a decontamination area. It increases your risk of inhaling or swallowing asbestos fibers.

When you are decontaminating your overalls, don't simply brush off dust or debris. That will throw asbestos fibers into the air.

- Instead, you need to use a HEPA vacuum to safely remove contamination from your overalls before you take them off (your company will provide a vacuum for you).

Remember, because your overalls have been contaminated with asbestos fibers they are considered to be "regulated waste", even after vacuuming.

- So they must be disposed of properly, in an asbestos disposal bag.

You'll also need to use the HEPA vacuum to clean off any equipment you worked with in the asbestos area, as well as the outsides of the disposal bags you've used.

As a further precaution against spreading asbestos fibers into the facility, you should change out of your work clothes and back into your street clothes.

- Contaminated work clothes should be stored in closed containers.
- Your employer is responsible for having them transported safely and cleaned, repaired or replaced as needed.

"Washing-up" is always a good idea after you've handled anything hazardous, and asbestos is no exception.

- Scrub your hands and face thoroughly with soap and water before leaving work (in fact, you should shower if possible).

If you can't shower at work, be sure to take a shower immediately when you get home.

- This way you won't expose your family or friends to asbestos fibers.

Even when all of the correct exposure control procedures are used, it may still be possible to be exposed to some level of asbestos in your workplace.

To monitor for potential exposure, and as a safeguard against future health problems, your facility may ask you to participate in a "medical surveillance program".

- As part of the program, you will make regular visits to a doctor, at which time you may be given "breathing capacity" tests, or have X-rays taken of your lungs.
- All the surveillance program procedures and treatments will be provided free of charge.
- Talk to your supervisor for more information.

Summary

Exposure to asbestos can cause mesothelioma, lung cancer and other serious health problems.

To reduce the risk to employees who work around asbestos-containing materials, OSHA has issued specific safety regulations requiring employers to test for unsafe levels of airborne asbestos.

- If unsafe levels are found, the facility must develop a written control program that will reduce your asbestos exposure to safe levels.

The OSHA Standard also requires employees to be trained to recognize asbestos hazards, as well as how they can protect themselves and their coworkers from these hazards.

There are several of ways that you can protect yourself from exposure to asbestos, including using safe work practices and wearing personal protective equipment.

By understanding the hazards of asbestos, and what you can do to avoid them, you can reduce your chances of exposure... and help to make your workplace a safer place for everyone!

ASBESTOS AWARENESS

Review Quiz

Name _____ Date _____

The following questions are provided to check how well you understand the information presented during this program.

1. True or False?... Asbestos fibers are so small that they can only be seen with a microscope.
 True False
2. True or False?... If there is a risk of asbestos exposure in your workplace, OSHA's Asbestos Standard requires your employer to train you on how to recognize asbestos hazards and deal with them safely.
 True False
3. True or False?... Inhaling asbestos fibers is 50 times more hazardous for people who smoke.
 True False
4. True or False?... Asbestos can be found in some floor and ceiling tiles.
 True False
5. True or false?... Asbestos can be found in many buildings even now because irresponsible builders continue to use it in spite of its adverse health effects.
 True False
6. True or False?... A slight deterioration of asbestos-containing insulation will usually not result in a release of fibers.
 True False
7. True or False?... It is very important to wash your hands and face after coming into contact with asbestos-containing materials.
 True False
8. True or False?... When asbestos fibers are stirred up into the air they can continue to float there for a long time.
 True False
9. True or False?... After working with asbestos-containing materials, you should wait until you get home before washing your face and hands.
 True False
10. True or False?... The first step in the asbestos decontamination process is brushing asbestos-containing dust or debris off of your protective clothing.
 True False

ASBESTOS AWARENESS

Answers to Review Quiz

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