

ASBESTOS AWARENESS

COURSE OUTLINE

- **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 can still 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.
- **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.
- **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.

- **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.
- **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) 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.**
- **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.**
- **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.**
- **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.

- **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.
- **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.

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- **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!**