ASBESTOS AWARENESS TRAINING
2012

University of Florida
Environmental Health and Safety

TOPICS COVERED

- What is asbestos?
- Uses of asbestos
- Why is asbestos hazardous to your health?
- Asbestos rules – general, specific

PROPERTIES OF ASBESTOS

- Naturally occurring fibrous minerals
  - Good tensile strength
  - Flexibility
  - Heat resistance
  - Electrical resistance
  - Good insulation
  - Chemical resistance
COMMON TYPES OF ASBESTOS

- **Chrysotile**
  - “White Asbestos”

- **Amosite**
  - “Brown Asbestos”

- **Crocidolite**
  - “Blue Asbestos”

OTHER TYPES OF ASBESTOS

- **Tremolite**
  - Libby, MT Vermiculite Mine

- **Actinolite**

- **Anthophyllite**

VERMICULITE

- Vermiculite “popped”
- Vermiculite insulation in attic
GENERAL USES OF ASBESTOS

- Thermal system insulation
- Reinforcement of materials
- Surfacing materials
- Fireproofing
- Acoustic and decorative plaster
- Textiles

GENERAL USES OF ASBESTOS (CONT.)

- Friction materials
- Asphalt and vinyl felts
- Papers and adhesives
- Flooring and roofing materials
- Filters, sealants, caulk, and gaskets

SOME ASBESTOS-CONTAINING MATERIALS

(NOTE: This list does not include every product/material that may contain asbestos. It is intended as a general guide to show which types of materials may contain asbestos.)

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<th>Cement Pipes</th>
<th>Packing Materials (for addition applications)</th>
<th>Electrical Panel Panels</th>
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<td>Cement Siding</td>
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<td>H Grading, Solid, Panels, Connections</td>
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<td>Heating and Electrical Ducts</td>
<td>Spackling Compounds</td>
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**SURFACING MATERIAL**

- Fireproofing
- Acoustical

**THERMAL SYSTEM INSULATION**

- Asbestos coating on outdoor pipe
- Air cell pipes
- Damaged/deteriorated insulation on control valve

**“PACM”**

Presumed Asbestos Containing Material

*Material must be handled as if it is ACM* (unless proved otherwise)

- Surfacing materials
- Thermal System Insulation
- Flooring**

Installed prior to 1981
WHY IS ASBESTOS HAZARDOUS?

Airborne asbestos fibers can be inhaled deep into the body's defense mechanisms cannot break down the fibers. Bodily mechanisms to remove asbestos from the body due to its fiber nature:

- Physical disturbance of ACM suspends fibers in the air
- Respirable fibers are inhaled and deposited in the lungs
- Body's defense mechanisms cannot break down the fibers
- Fibers cause damage to the respiratory system

HOW DO ASBESTOS FIBERS GET AIRBORNE?

- Mechanical action on ACM (cutting, sawing, grinding, sanding, drilling, buffing, etc.)
- Disturbing/breaking ceiling tiles
- Removing/replacing insulation
- Disturbing sprayed-on asbestos
- Damaged or deteriorated ACM
- Asbestos abatement project
- Un-surveyed construction projects on older buildings
ASBESTOS-RELATED DISEASES
Asbestos can cause disabling respiratory disease and various types of cancers if the fibers are inhaled.

- Asbestosis
- Mesothelioma
- Lung Cancer
- Other cancers

Joe Darabant, covered with chrysotile asbestos fibers, 1949. Worked with asbestos for 30+ years.

Joe’s bedroom, 1989. Forced to retire at age 50 from poor health, he died from asbestosis in 1990 at age 66.

Photos © RAVANESI®2000

Richard Pankowski, 1986; died age 36 from pleural mesothelioma. Worked <1 year at asbestos-containing products plant. Father also worked at the plant >30 years and died from asbestosis.

Photos © RAVANESI®2000

Mesothelioma

Right lung is completely encapsulated by the tumors which have crushed the lung to about one-third of its original size.
**Lung Cancer**

Lung Cancer Risks

- No Exposure
- Asbestos
- Smoking
- Asbestos + Smoking

70 per 100,000 in general population

**Other Cancers**

- esophagus
- larynx
- oral cavity
- stomach
- colon
- kidney

**Asbestos Exposure**

Potential for asbestos-related disease depends on

- Amount of fiber inhaled
- Duration of exposure (years)
- Whether exposed individual smokes
- Age
EVALUATING ASBESTOS HAZARDS

- Type of Material
  - Asbestos content
  - Intact / Not Intact
  - Location

- Condition of Material
  - deterioration or delamination
  - physical or water damage

EVALUATING ASBESTOS HAZARDS

- Potential for disturbance or erosion
  - near air plenum or air stream?
  - materials exposed and accessible?
  - degree of activity?
  - change in building use?
ENVIRONMENTAL REGULATIONS

EPA

- AHERA (Asbestos Hazard Emergency Response Act)
- NESHAPS (National Emission Standards for Hazardous Air Pollutants)

WORKER PROTECTION RULE

- 40 CFR 763
  - Extends OSHA Asbestos Regulation coverage to State employees
  - OSHA General Industry – Building Services & Vehicle Service
  - OSHA Construction – Building Trades & Construction Related tasks

OSHA REGULATIONS

- 29 CFR 1926.1101 (Construction)
- 29 CFR 1910.1001 (General Industry)
- Identifies 4 asbestos work classes
- Notification Requirements
- Worker Protection/Training
- Air monitoring
GENERAL ASBESTOS STANDARD

- Applies to asbestos exposure in General Industry, such as exposure during brake and clutch repair, custodial work, and manufacture of asbestos containing products.

GENERAL REQUIREMENTS

- Permissible exposure limits (PEL)
  - 8-hour Time weighted average (TWA) 0.1 fiber per cubic centimeter (0.1 f/cc)
  - 30-minute Excursion limit 1.0 f/cc

- Initial Monitoring
- “Historical Data”
  - General Industry: After 3/31/1992
  - Construction: Within last 12 month
- Objective Data

ENGINEERING & WORK PRACTICE CONTROLS REGARDLESS OF LEVELS OF EXPOSURE

Work Practices
- Wet methods
- Intact removal
- HEPA filtered vacuums
- Prompt cleanup and disposal
- Specific requirements for roofing, flooring, siding and gaskets
STATE OF FLORIDA REGULATIONS

- Florida Statute 469
  - Requires 3 day notice to DBPR for asbestos floor tile removals
  - Requirements for asbestos consultant and contractor licensing
- Florida Statute 255 (Removed 2011)
  - Managing asbestos in public buildings

EH&S REQUIREMENTS

- Asbestos Project Notification Form (APNF)
  - Must be submitted to EH&S prior to the start of a project
  - Specific EH&S # is assigned to each project
  - A copy of all records must be forwarded to EH&S
ASBESTOS MANAGEMENT AT UF

- Regulatory compliance
- Annual inspections of identified asbestos containing materials
- Sample collection and analysis
- Project inspections
- Recordkeeping

ASBESTOS POLICY

- Asbestos Policy (September 2010)
- Asbestos Floor Tile Policy (January 2012)
- Asbestos O & M Plan (January 2012)

WHEN IS A SURVEY REQUIRED?

- Before any renovation or demolition project
- Regardless of the age of the building
- Doesn’t necessarily have to be a full blown survey for every project
- On small jobs, EH&S can collect samples
GENERAL HOUSEKEEPING REQUIREMENTS

- If you identify or suspect that a material contains asbestos, do not sweep or dust.
- Contact your supervisor and keep area clear until EHS can arrive to inspect the area and debris.

CUSTODIAL/LIGHT MAINTENANCE WORK

**Activities**
- sweeping
- vacuuming
- cleaning
- changing lights

**Some materials of concern**
- Vinyl Asbestos Tile (VAT)
- popcorn ceiling
- exposed piping (damaged/partially removed coating)
- exposed fireproofing

SPECIALIZED CLEANING PROCEDURES

- For Building Services staff who clean, strip, wax, and buff floor coverings known or presumed to contain asbestos:
  - Stripping must be conducted using low abrasion pads at a speed lower than 300 rpm, using wet methods.
  - Burnishing or dry buffing is allowed only on asbestos-containing floor tile which has a sufficient finish so the pad cannot contact the actual matrix.
  - Sanding, cutting, coring, and drilling of the floor is prohibited.
CUSTODIAL/LIGHT MAINTENANCE WORK

- Work practices

- Do not sand asbestos floor tiles or backing material.
- Do not disturb asbestos material when replacing light bulbs, etc.

CUSTODIAL/LIGHT MAINTENANCE WORK

- Work practices

- Do not dry sweep floors
- Use only a special HEPA vacuum to clean up asbestos debris.
- Wet mop floors

ASBESTOS INSIDE A FIRE DOOR
RULES OF THUMB

- Buildings prior to 1985 but asbestos is still legal to be used
- 9" floor tile and/or black mastic - almost always positive for asbestos
- Grey cementitious sheets in fume hoods and greenhouses
- Underground water lines of grey concrete
- Roofing
CONTACT INFORMATION

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