Asbestos Abatement Worker Syllabus

Time: 40 hours

Maximum Class Size: 12

Prerequisite: Asbestos Awareness

Course Description: This course is designed to empower the participant with the skills and knowledge to work safely, effectively and efficiently on an asbestos abatement job site. The participant will learn the correct asbestos abatement techniques as well as important safety and health information related to this hazardous substance.

Standards Addressed:

OSHA Asbestos Standard:	29 CFR 1926.1101
OSHA 1926.1101 Subpart Z:	Toxic and Hazardous Substances

Goals/Objectives/Student Learning Outcomes:

- Define the following terms and acronyms:
  - ACM
  - EPA
  - Asbestos fiber
  - Friable asbestos-containing material
  - Micron
  - Non-friable asbestos-containing material
  - OSHA
  - PACM
  - PEL
  - SM
  - TSI
- List the six types of asbestos, as defined by OSHA.
- List the two most common types of asbestos used in construction.
- Explain the difference between friable and non-friable asbestos-containing materials.
- Know and understand the OSHA permissible exposure limit for asbestos.
- Describe a Class I asbestos work activity.
- Describe a Class II asbestos work activity.
- Describe a Class III asbestos work activity.
- Describe a Class IV asbestos work activity.
- Define the following terms:
  - Carcinogen
  - Ingestion
  - Inhalation
  - Latency period

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Goals/Objectives/Student Learning Outcomes-continued:

  - Routes of entry
  - Synergism
- Identify the two major routes of entry for asbestos into the body.
- Explain the relationship between smoking and exposure to asbestos.
- List three diseases linked to occupational asbestos exposure and describe the symptoms of each disease.
- Name the body organs affected by asbestos exposures and explain how asbestos affects each one.
- List three protective mechanisms the body uses to get rid of asbestos fibers, and explain how these mechanisms work.
- Define the following acronyms:
  - FEV1
  - FVC
  - NIOSH
  - PFT
- List the three reasons for establishing a medical monitoring and surveillance program.
- List the five required elements of an initial/preplacement examination for asbestos abatement workers, the five required elements of an annual examination, and two additional recommended tests.
- State the number of years an employer must keep the medical records of each employee.
- List 10 legal rights workers have under the Occupational Safety Act of 1970.
- List the seven responsibilities workers have under the Occupational Safety and Health Act of 1970.
- List seven steps workers should follow if they are punished for exercising any OSHA legal right.
- Explain the purpose of the following EPA standards:
  - NESHAP
  - AHERA
  - ASHARA
- Describe the following three air-purifying respirators and list the assigned protection factor (APF) for each:
  - o Half-Face Air Purifying Respirator (Half-Face APR)
  - Full-Face Air Purifying Respirator (FFAPR)
  - Powered Air Purifying Respirator (PAPR)
- List and explain at least six limitations of APRs.
- List and explain the three-filter series and three filter efficiency levels for particulate filters.
- Explain the terms breakthrough and warning properties, and list four steps that should be taken if breakthrough occurs.
- Explain the term “assigned protection factor” (APF) and how it relates to a respirator
- Correctly state the APF for the three respirators mentioned in the first objective
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- Explain the abbreviation MUC as it relates to a respirator and calculate the correct MUC for at least four out of five sample respirators.
- Explain the difference between the three delivery systems for breathing air:
  - Continuous Flow
  - Demand
  - Pressure Demand
- Explain how a supplied airline respirator (SAR) works. List three limitations of the SAR and the APRs for both the SAR and the SAR with escape.
- Explain how an open-circuit pressure demand SCBA works, its limitation, and APF
- Given the proper equipment, demonstrate the proper procedures for refilling and SCBA cylinder.
- List and explain the nine requirements of a Respiratory Protection Program.
- Explain the difference between a qualitative and a quantitative fit test and give two examples of each.
- Demonstrate and explain the proper procedure for performing a positive and negative user seal check on an APR. Using a variety of respirators, demonstrate how to put on, use, take off, and maintain each respirator according to the guidelines of this chapter.
- List and explain the three different types of leakage that can occur with chemical protective clothing.
- List and explain five factors that can affect your work mission duration on an environmental project.
- Describe the four levels of protection that may be used when doing Hazardous Waste work.

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Goals/Objectives/Student Learning Outcomes-continued:

- Given a variety of protective clothing and specific instructions for putting on and taking off various work PPE sets, demonstrate the correct procedures according to the guidelines presented.
- Define the following acronyms and terms:
    - Accident
    - Confined space
    - Engineering controls
    - GFCI
    - Hazardous atmospheres
    - LFL
    - UFL
    - Oxygen deficiency
    - Lock out and Tag out
    - Personal Fall Arrest System
    - Heat Stress
    - Personal Hygiene
- Understand the different levels of heat stress and the dangers they pose to workers.
- Given a variety of job site scenarios, demonstrate safe work practices around the following hazards:
    - Electrical
    - Ladders
    - Scaffolds
    - Housekeeping
    - Falls
    - Confined Spaces
    - Hazardous atmospheres
- Understand what fire hazards exist in a controlled area and how to prepare for the occurrence of an accidental fire.
- Define the following acronym and terms:
    - Clean room
    - Equipment room
    - HVAC
    - Shower room
    - Waste load-out area
- List and explain four reasons for preplanning asbestos abatement operations.
- List the 12 steps in preparing the work area.
- Define the purpose of decontamination on an asbestos abatement project.
- List the elements of the decontamination chamber and explain the function of each.
- Explain the purpose and function of a negative pressure air unit. Using several example spaces, calculate the number of machines needed to meet air change requirements.
- Given the proper materials and equipment, prepare the work area, set up the required number of negative air machines, and set up a three-chamber decontamination unit according to the guidelines in this chapter.
- Define the following:
    - Amended water
    - Encapsulation
    - Enclosure
    - Glove bag
    - HEPA vacuum
    - NESHAP
- Describe the difference between bridging and penetrating sealants.
- List three advantages and seven disadvantages of encapsulation.
- List three advantages and seven disadvantages of enclosure.
- List 10 tools commonly used with a glove bag.
- Describe the two stages of asbestos abatement.
- List the 19 steps of the final cleanup.

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Goals/Objectives/Student Learning Outcomes-continued:

- Define the following terms and acronyms:
  - Aggressive sampling
  - Area sampling
  - Breathing zone
  - Bulk sampling
  - PCM
  - Personal sampling
  - PLM
  - Static sampling
  - TEM
- Explain how and why air sampling is done on an asbestos abatement project.
- List the two analytical methods used in final clearance of asbestos abatement projects.
- Explain the difference between static sampling and aggressive sampling.
- Describe bulk sampling, settled dust sampling, and wipe sampling methods.
- List and briefly describe the limitations of three analytical methods used in asbestos abatement.
- Explain the purpose for taking area samples from outside the work area (but inside the building) and from outside the building.

Classroom Rules and Procedures:

- All classes begin at 6:30 am and end at 3:00 pm
- Upon entering classroom, all participants must sign in and be seated by 6:30 am
- Class will consist of a combination of lecture, video, demonstration, coached group exercises, individual exercises and assessment.
- Students are required to report to class ready to work and maintain the provided PPE

Textbooks/Readings/Materials:

- LIUNA Asbestos Abatement Worker Instructor Guide & Participant Guide
- *Asbestos Abatement Worker* Student Workbook
- DVD: LIUNA *Asbestos Abatement Techniques*
- DVD: LIUNA *Work Area Preparation*
- PPT: *Asbestos Abatement Worker*
- Environmental Training Program Evaluation Form
- EPA Asbestos Abatement Worker Training Course Evaluation Form
- *Asbestos Abatement Worker* Exit Exam A or B
- *Asbestos Abatement Worker* Answer Sheets

Tools/Equipment/Other Materials

- Respirators or photos of respirators
- Half-face APR
- Full-face APR
- PAPR
- Airline
- SCBA-optional

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Samples of filters:

- P-100
- R-95
- N-95
- FAFR
- Fit Testing kit with testing agent
- Rainbow passage poster
- Tyvek suit
- Work Gloves
- Duct tape
- Hard Hat
- Rubber boots-optional
- A calculator for each participant
- Pencils with erasers
- Enlarged diagram of air locks, equipment room, clean room, waste load-out area, decontamination
- DVD player
- LCD projector
- Equipment for 'Decon'
- Simulated containment area
- Rolling scaffold (baker scaffold or other tubular frame scaffold on wheels
- Step ladder
- Utility knives
- One or more negative air units with flex duct
- Decontamination facility materials
- 6-mil polyethylene
- 4-mil polyethylene
- Duct tape
- Spray adhesive
- Staple gun
- Staples
- Aspirator bulb
- Detection smoke tubes
- Simulated asbestos material (cellulose insulation; "popcorn" ceiling material)
- Sprayer with amended water
- Garden hose with nozzle
- Scrapers
- Nylon scrub brushes
- Disposal bags
- Plastic shovels
- Squeegees
- HEPA vacuum
- Disposable coveralls
- Respirators
- 2" duct tape
- Rolling scaffold with guardrail-optional
- Lighting-string or halogen if needed
- Extension cords
- High flow pump or picture of high flow pump
- Personal sampling pump
- Plastic cassette
- filter
- Electric fan or leaf blower to demonstrate aggressive sampling
- Materials to demonstrate the different sampling techniques
- 10" x 10" gauze pads to demonstrate wipe sampling
- Powder and other material to simulate asbestos and other contaminants

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Personal Protective Equipment

- 12 pairs of gloves
- 12 pairs of Safety Glasses
- 20 pairs of Ear plugs
- 12 hard hats
- 12 Tyvek suits
- 12 pairs of boots
- 12 masks

Course Requirements

In order to receive credit for the course, participants must:

- Be present for full forty hours
- Participate in all classroom exercises
- Pass a written exam
- Pass all hands-on exams

Course Policies

- Participants must be on-time and ready to work.
- Participants must return from breaks on-time.
- Participants must participate in each exercise and assignment
- Participants who are on “light duty” are not allowed to take this course due to the physically demanding requirements.

Assessment and Grading

Participants will be assessed on the following:

- All written exams must be passed with a score of 80% or above.
- All hands-on exercises are graded on performance and participation. They are pass/fail and must be passed with a score of 80% or above.

Safety

Failure to maintain and use PPE may result in dismissal from the course.