

ATLB-2740: LEAD ABATEMENT

Cuyahoga Community College

Viewing: ATLB-2740 : Lead Abatement

Board of Trustees:

2003-05-22

Academic Term:

Spring 2019

Subject Code

ATLB - AIT-Construct/Hazard Material

Course Number:

2740

Title:

Lead Abatement

Catalog Description:

Concepts related to OSHA lead abatement regulations. Includes areas of lead abatement, responsibility of lead abatement workers, effects of lead in the body, personal protective equipment, collection methods, and labeling systems. Extensive guided instruction and practice provided.

Credit Hour(s):

3

Lecture Hour(s):

3

Requisites

Prerequisite and Corequisite

Completion of 6 credit hours in ATLB, ATCT, ATBL, or ATCM coursework, or departmental approval.

Outcomes

Course Outcome(s):

N/A

Objective(s):

1. Assess uses of lead and the major responsibilities of lead abatement workers.
 2. Evaluate why lead based paints are used as coatings on surfaces, assessing and analyzing several applications of the material.
 3. Identify the major routes of entry for asbestos into the body and explain what happens once lead is in the body.
 4. Discuss the effects of lead and analyze appropriate medical treatment, and tests for several symptoms.
 5. Analyze test results in several analyses.
 6. Evaluate proper use of personal protective equipment used by abatement workers by identifying several types of equipment.
 7. List the items that are checked on a regular basis prior to using a ladder and other site safety methods.
 8. Perform dust sampling and preferred collection methods.
 9. Evaluate hazard communications techniques by identifying standards, and permissible exposure limits.
 10. Identify and explain the most common inspection methods.
 11. Assess abatement on steel structures by identifying engineering controls, demonstrating work practice controls, and removal methods.
 12. Explain the procedures used for preparation and containment of dry and liquid waste generated during exterior lead abatement.
 13. List the three basic types of labeling systems.
 14. Explain why welding or burning lead painted steel exposes workers to high levels of lead.
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Methods of Evaluation:

1. Quizzes
2. Exams
3. Classroom participation
4. Demonstration of assigned projects

Course Content Outline:

1. History of lead
 - a. Discovery of hazards
 - b. Modern day uses
 - c. Exposure
 - i. construction
 - ii. environmental
 - iii. recreational
 - iv. occupational
2. Health effects of lead
 - a. How lead enters the body
 - i. ingestion
 - ii. inhalation
 - iii. absorption
 - b. Effects of lead
 - i. acute
 - ii. chronic
 - iii. children
 - iv. various systems of the body
 - c. Medical tests
 - i. blood level
 - ii. zinc protoporphyrin
 - iii. OSHA required tests
 - d. Medical treatment
3. Lead regulation
 - a. Exposure assessments
 - i. initial
 - ii. periodic
 - b. Compliance
 - i. ventilation
 - ii. controls
 - iii. respiratory protection
 - iv. clothing and equipment
 - v. housekeeping
 - vi. hygiene facilities
 - c. Surveillance
 - i. initial
 - ii. medical
4. Personal protective equipment
 - a. Respiratory
 - b. Air purifying respirators
 - c. Filtering devices
 - d. Atmosphere supplying respirators
 - e. User seal checks
 - f. Qualitative fit testing
 - g. Using personal protective equipment
5. Site safety
 - a. Preventing accidents
 - b. Work safety
 - c. Electrical safety
 - d. Fall protection systems
 - e. Ladders and scaffolds
 - f. Heat stress

- g. Confined space entry
- h. Fire safety
- 6. Sampling methods
 - a. Methods
 - i. visual identification
 - ii. past records
 - iii. quick check chemical
 - iv. XRF analysis
 - v. paint chip analysis
 - vi. air sampling
 - vii. soil sampling
 - viii. perimeter sampling locations
 - ix. dust sampling
 - x. water sampling
 - b. Interpreting results
 - c. Clearance and action levels
- 7. Risk assessment
 - a. Paint inspections
 - b. Regulations
 - c. Evaluation
 - i. observe XRF test
 - ii. unannounced visits
 - iii. inspector results
 - iv. retesting
 - d. Laboratory testing
 - i. collection
 - ii. analysis
 - e. Final report
 - i. hazard control options
 - ii. cost and feasibility
- 8. Abatement methods
 - a. Interim controls
 - i. paint film stabilization
 - ii. friction and impact
 - iii. dust removal and control
 - iv. soil interim control
 - b. Work area preparation
 - i. site preparation
 - ii. limit access
 - iii. common areas
 - iv. maintenance and containment
 - v. exterior procedures
 - vi. ventilation
 - c. Personal hygiene
 - d. Decontamination units
 - i. two chamber
 - ii. three chamber
 - e. Methods
 - i. permitted
 - ii. prohibited
 - f. Enclosure
 - g. Encapsulation
 - i. factors
 - ii. precautions
 - iii. suitability
 - iv. patch tests
 - h. Paint removal techniques

- i. advantages and disadvantages
 - ii. on-site paint removal
 - iii. off-site paint removal
 - i. Other removal methods
 - i. abrasive blasting
 - ii. power machinery
 - j. Clean up and disposal
 - i. dry cleaning
 - ii. wet cleaning
 - iii. daily cleanup
 - iv. post-abatement cleanup
 - v. final cleanup
 - vi. final inspection
 - vii. clearance dust levels
- 9. Hazard communication
 - a. Standard
 - i. scope
 - ii. determination
 - iii. written communication
 - b. Exposure guides
 - i. permissible exposure limits
 - ii. threshold limit values
 - c. Labels and lists
 - i. special labels
 - ii. National Fire Protection Association labels
 - iii. Department of Transportation labels
 - d. Chemicals
 - i. acids, bases, and alkalis
 - ii. adhesives and sealants
 - iii. cleaners
 - iv. concrete
 - v. fuels
 - vi. solvents
 - vii. wood
- 10. Abatement on steel structures
 - a. Engineering controls
 - i. substitution
 - ii. process and equipment modification
 - iii. isolation
 - iv. ventilation
 - b. Work practice controls
 - i. housekeeping
 - ii. inspection and maintenance
 - iii. performance of task
 - iv. supervision
 - v. administrative controls
 - c. Methods
 - i. abrasive blasting
 - ii. wet removal
 - iii. chemical removal
 - iv. manual removal

Resources

Cheremisinoff, Paul. *Lead: a guidebook to hazard detection, remediation, and control*. Englewood Cliffs, NJ: Prentice-Hall, 1997.

Laborers Education and Training Fund. *Lead Abatement Worker*. Pomfret Center, CN: LIUNA at Work, 2001.

Tasaday, Lawrence. *Residential Lead Abatement*. New York: McGraw Hill, 1995.

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