

COLORADO AMS INITIAL COURSE

REQUIRED TOPICS

Course Length 4 Days, 32 Hours

- ◆ Characteristics of Asbestos
 - Physical characteristics and types
 - History of asbestos use
 - Typical uses in materials

- ◆ Health Effects
 - The human respiratory system
 - Routes of exposure
 - Dose-response relationships
 - Types of asbestos related diseases
 - Latency periods
 - Smoking

- ◆ Personal Protective Equipment
 - Types, characteristics and limitation of respirators
 - How to match the respirator to the job/protection factors
 - Clothing – suits, boots, gloves, etc.

- ◆ Regulations as they pertain to the AMS
 - Federal
 - NESHAP
 - AHERA
 - ASHARA
 - EPA Worker Protection
 - OSHA
 - State
 - Colorado Regulation 8

- ◆ Roles and Responsibilities of the AMS
 - Background/Ambient sampling
 - Daily air monitoring
 - Visual inspections
 - Clearance air monitoring
 - Understanding and following a project design or specs
 - Understanding changes in the scope of work
 - Communication with contractors/building owners/building occupants
 - Enforcement – CDPHE & Local Health Departments, OSHA
 - “The Dirty Dozen”
 - Responsibilities/Authority/Chain-of-Command
 - Other involved parties
 - Spill characterization responsibilities
 - Legal responsibilities

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- ◆ Building Construction and Systems
 - Construction basics
 - Building systems
 - Where might you find ACM
 - How abatement activities affect building systems
 - How abatement activities affect other ACMs in the building
 - How abatement activities affect building occupants

- ◆ Abatement Activities
 - O & M
 - Repairs
 - Enclosure
 - Encapsulation
 - Removal
 - Work Practices
 - Pre-cleaning
 - Wetting
 - Removal methods to minimize fiber release
 - Cleaning
 - Bagging and disposal

- ◆ Engineering Controls
 - Critical barriers vs. covered, fixed objects
 - Full containment
 - Secondary containment
 - Glovebags
 - Shutdown/modification of building systems
 - DECON and load out chambers – construction and use
 - Self-closing “Z” flaps
 - Air changes per hour/negative pressure – calculations and differences
 - Placement/use of manometers
 - Placement/use of negative air machines
 - Placement of make-up air
 - HEPA Vacuums
 - Smoke testing

- ◆ Hands on session
 - Calculations of AC/H
 - # of NAMs necessary for -0.02
 - Hands on use of smoke tubes
 - Practical exercise on where critical barriers should be placed, what objects should be covered, zeroing manometer

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- ◆ Air Sampling
 - Methods
 - NVLAP
 - AHERA
 - OSHA
 - NIOSH
 - Differences/uses of TEM & PCM
 - Environmental, clearance and overview of personal sampling
 - Differences/uses of high volume vs. low volume
 - Pump calibration
 - Primary
 - Secondary
 - Explanation of rotometers
 - Temperature/altitude/RH variations effects on sampling
 - Number/frequency of samples
 - Flow rates
 - Volumes
 - Sample placement
 - Sample collection - cassettes and how to handle them
 - Collecting samples in a “dirty” environment – overloading and lockdown
 - Blanks
 - Sample handling – labeling and cross-contamination
 - Use of accredited laboratories
 - Transportation/shipment of samples
 - Chain-of-custody

- ◆ Interpretation of results.
 - MAAL
 - TWA
 - Clearance – PCM and TEM
 - QC of laboratory calculations

- ◆ Paperwork
 - Sampling logs
 - Containment logs
 - Personal certification
 - Permits and variances
 - Technical writing
 - Mathematical calculations

- ◆ Hands on session
 - Calculations of flow rates and volumes
 - Pump calibration
 - Hands on use of high and low volume pumps
 - Locations where pumps should be placed.
 - Rotometer calibration.
 - Hands on exercise in filling out paperwork and calculations

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- ◆ Final visual inspection
 - Containment dry time
 - Details on how to look for debris
 - Lighting
 - Other helpful hints and equipment – mirrors, picks, etc.
 - What does “All visible dust and debris” really mean?
 - ASTM
 - How clean is clean?
 - Re-cleaning and re-inspection
 - Special considerations/challenges for:
 - Crawl spaces
 - TSI/boilers
 - Scrapes
 - Flooring and mastic/linoleum backing
 - Glovebags
 - Component removal

- ◆ Final air sampling
 - Aggressive sampling – fans and leaf blowers – use and calculations
 - Placement of pumps
 - Methods
 - NIOSH
 - AHERA
 - Interpretation of results

- ◆ Demobilization
 - Handling AMS equipment
 - Discussion of “post clearance” inspections

- ◆ Hands on session
 - Calculations of flow rates, volumes and pump calibration for finals
 - Practical exercise on where pumps and fans should be placed for finals
 - Conduct mock visual inspection

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- ◆ Safety Aspects Other Than Asbestos
 - What to do in case of an emergency
 - Fire – extinguishers and exits
 - Confined space entry
 - Ladders and scaffolding
 - Electrical hazards
 - Other hazardous materials present
 - Heat/cold and other health hazards besides asbestos
 - Slips, trips and falls

- ◆ Spill Response
 - Role/Responsibility of AMS
 - Unplanned occurrences
 - Fires – thermal currents
 - Floods – water directions
 - Work activities of other contractors on site
 - Other involved parties – owners/contractors/fire/police/Health Departments
 - Uses/limitations of:
 - Air sampling
 - Tape sampling
 - Microvac sampling
 - Settled dust
 - Ultrasonification
 - Soil/bulks
 - Interpretation of results
 - MAAL – PCM/TEM
 - Responses to major/minor spills

- ◆ Review

- ◆ Exam – Written and Practical
 - Practical Exam must include, at minimum, the following:
 - Calibration of pumps (both high and low volume) with primary standard
 - Calibration of secondary source
 - Establishing a sampling train (low and high volume pumps)
 - Filling out data sheets – diagrams and calculations