

ing fiber release; use of wet methods; use of negative pressure ventilation equipment; use of high efficiency particulate air (HEPA) vacuums; proper clean-up and disposal procedures; work practices for removal, encapsulation, enclosure, and repair; emergency procedures for sudden releases; potential exposure situations; transport and disposal procedures; and recommended and prohibited work practices.

(e) *Personal hygiene.* Entry and exit procedures for the work area; use of showers; avoidance of eating, drinking, smoking, and chewing (gum or tobacco) in the work area; and potential exposures, such as family exposure.

(f) *Additional safety hazards.* Hazards encountered during abatement activities and how to deal with them, including electrical hazards, heat stress, air contaminants other than asbestos, fire and explosion hazards, scaffold and ladder hazards, slips, trips and falls, and confined spaces.

(g) *Medical monitoring.* OSHA requirements for a pulmonary function test, chest X-rays and a medical history for each employee.

(h) *Air monitoring.* Procedures to determine airborne concentrations of asbestos fibers, focusing on how personal air sampling is performed and the reasons for it.

(i) *Relevant federal, state and local regulatory requirements, procedures and standards.* With particular attention directed at relevant EPA, OSHA, and state regulations concerning asbestos abatement workers.

(j) *Establishment of respiratory protection programs.*

(k) *Course review.* Review of key aspects of the training course.

E. Project Designers. All persons seeking certification as project designers shall complete a 3-day project designer training course as outlined below. The 3-day project designer training program shall include lectures, demonstrations, a field trip, course review, and a written examination. The department recommends the use of audiovisual materials to complement lectures, where appropriate.

The 3-day project designer training course shall adequately address the following topics:

(a) *Background information on asbestos.* Identification of asbestos; examples and discussion of the uses and locations of asbestos in buildings; physical appearance of asbestos.

(b) *Potential health effects related to asbestos exposure.* Nature of asbestos-related diseases; routes of exposure; dose-response relationships and the lack of a safe exposure level; the synergistic effect between cigarette

smoking and asbestos exposure; the latency period of asbestos-related diseases; a discussion of the relationship between asbestos exposure and asbestosis, lung cancer, mesothelioma, and cancer of other organs.

(c) *Overview of abatement construction projects.* Abatement as a portion of a renovation project; OSHA requirements for notification of other contractors on a multi-employer site (29 CFR 1925.58).

(d) *Safety system design specifications.* Construction and maintenance of containment barriers and decontamination enclosure systems; positioning of warning signs; electrical and ventilation system lock-out; proper working techniques for minimizing fiber release; entry and exit procedures for the work area; use of wet methods; use of negative pressure exhaust ventilation equipment; use of high efficiency particulate aerosol (EPA) vacuums; proper clean-up and disposal of asbestos; work practices as they apply to encapsulation, enclosure, and repair; use of glove bags and a demonstration of glove bag use.

(e) *Field trip.* Visit an abatement site or other suitable building site, including on-site discussions of abatement design, building walk-through inspection, and discussion following the walk-through.

(f) *Employee personal protective equipment.* To include the classes and characteristics of respirator types; limitations of respirators; proper selection, inspection, donning, use, maintenance, and storage procedures; methods for field testing of the facepiece-to-face seal (positive and negative pressure fitting tests); qualitative and quantitative fit testing procedures; variability between field and laboratory protection factors; factors that alter respirator fit (e.g., facial hair); components of a proper respiratory protection program; selection and use of personal protective clothing; use, storage, and handling of non-disposable clothing; and regulations covering personal protective equipment.

(g) *Additional safety hazards.* Hazards encountered during abatement activities and how to deal with them, including electrical hazards, heat stress, air contaminants other than asbestos, fire and explosion hazards.

(h) *Fiber aerodynamics and control.* Aerodynamic characteristics of asbestos fibers; importance of proper containment barriers; settling time for asbestos fibers; wet methods in abatement; aggressive air monitoring following abatement; aggressive air movement and negative pressure exhaust ventilation as a clean-up method.

(i) *Designing abatement solutions.* Discussions of removal, enclosure, and encapsulation methods; asbestos waste disposal.

(j) *Budgeting/cost estimation.* Development of cost estimates; present costs of

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abatement versus future operations and maintenance costs; setting priorities for abatement jobs to reduce cost.

(k) *Writing abatement specifications.* Means and methods specifications versus performance specifications; design of abatement in occupied buildings; modification of guide specifications to a particular building; worker and building occupant health/medical considerations; replacement of ACM with non-asbestos substitutes; clearance of work area after abatement; air monitoring for clearance.

(l) *Preparing abatement drawings.* Use of as-built drawings; use of inspection photographs and on-site reports; particular problems in abatement drawings.

(m) *Contract preparation and administration.*

(n) *Legal/liabilities/ defenses.* Insurance considerations; bonding; hold harmless clauses; use of abatement contractor's liability insurance; claims-made versus occurrence policies.

(o) *Replacement.* Replacement of asbestos with asbestos-free substitutes.

(p) *Role of other consultants.* Development of technical specification sections by industrial hygienists or engineers; the multidisciplinary team approach to abatement design.

(q) *Occupied buildings.* Special design procedures required in occupied buildings; education of occupants; extra monitoring recommendations; staging of work to minimize occupant exposure; scheduling of renovation to minimize exposure.

(r) *Relevant federal, state and local regulatory requirements.*

(1) TSCA Title II;

(2) National Emission Standards for Hazardous Air Pollutants, 40 CFR Part 61, Subparts A (General Provisions) and M (National Emission Standard for Asbestos);

(3) OSHA standards for permissible exposure to airborne concentrations of asbestos fibers and respiratory protection, 29 CFR 1910.134;

(4) EPA Worker Protection Rule, 40 CFR Part 763, Subpart G;

(5) OSHA Asbestos Construction Standard, 29 CFR 1926.58.

(s) *Course review.* Review of key aspects of the training course.

F. Roofing Workers. All persons seeking certification as roofing workers shall complete a one-day roofing worker training course as outlined below. The one day course

shall include lectures, demonstrations and hands-on, a course review and a written examination.

The training course shall adequately address the following topics within a minimum amount of class time specified:

(a) *Asbestos characteristics.* Identification of asbestos, aerodynamic characteristics, typical asbestos uses in roofing. Duration: 45 minutes.

(b) *Potential health effects related to asbestos exposure.* Nature of asbestos related diseases, lack of safe exposure level, synergism between cigarette smoking and asbestos exposure, routes of exposure, dose response relationship, latency period. Duration: 45 minutes.

(c) *Personal protective equipment.* Classes and characteristics of respirators, qualitative and quantitative fit testing, personal protective clothing, risk of family exposure, medical surveillance, limitations of respirators, field testing respirators, respirator protection factors, factors that alter respirator fit, use/storage/handling of non-disposable clothing, respiratory protection, proper selection/inspection/donning/use/storage procedures for respirators, components of a proper respiratory protection program. Duration: 2 hours.

(d) *Regulations for workers.* Wisconsin Department of Natural Resources regulations, Wisconsin Department of Health and Social Services regulations, U.S. Occupational Safety and Health Administration regulations, U.S. Environmental Protection Agency regulations - NESHAP/AHERA, Wisconsin Department of Industry, Labor and Human Relations regulations, Wisconsin Department of Transportation regulations. Duration: 45 minutes.

(e) *State of the art work practices.* General safety, engineering controls, wet methods associated with roofing work, NESHAP category I and II roofing material, operations and maintenance criteria, impact of roofing activities on interior asbestos-containing materials, air sampling for worker's interpretation of results, handling procedures for asbestos-containing roofing materials, proper use of power equipment, demonstration of decontamination procedure, decontamination units. Duration: 2 hours.

G. Roofing Supervisors. All persons seeking certification as roofing supervisors shall complete a one-day roofing worker course as outlined above and an additional one-day roofing supervisor training course. The training program shall include lectures, demonstrations and hands-on, course review and a written examination.

The training course shall adequately address the following topics within a minimum amount of class time specified:

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(a) *Bulk sampling for asbestos-containing roofing materials.* Techniques for bulk sampling and sampling equipment, quality control and assurance procedures, use of respiratory protection, repair of the sampling area, use of polarized light microscopy. Duration: 30 minutes.

(b) *Air sampling for airborne asbestos fibers.* Regulations and recordkeeping, calibration, interpreting results, asbestos analysis by PCM/TEM, equipment terminology, air sampling strategies and techniques for roofs. Duration: 1 hour.

(c) *Regulations for supervisors.* DOT regulations related to asbestos, 29 CFR 1926.58 (asbestos construction standards), Wisconsin Administrative Code Chapter ILHR 32 (asbestos regulations for public sector employees), 29 CFR 1910.134 (respiratory protection), Wisconsin Administrative Code Chapter HSS 159 (asbestos certification), overview of 40 CFR 763 (AHERA), 29 CFR 1926.59 (hazard communication standard), regulation interpretations, Wisconsin Administrative Code Chapter NR 447 (control of asbestos emissions) and Section NR 502.06 (3) (collection and transportation). Duration: 1 hour and 30 minutes.

(d) *Insurance/liability issues.* Tort law, occurrence insurance, regulatory law, claims made insurance, contractual law, worker's compensation. Duration: 30 minutes.

(e) *Other supervisory issues.* Emergency planning, contract specifications, slower worker productivity, fear associated with asbestos work, logistical problems related to asbestos-containing roofing materials, negative pressure/local exhaust ventilation. Duration: 1 hour.

(f) *On-site representative/competent person.* Glove bags and how they work, negative pressure enclosures, local exhaust ventilation systems, considerations when coordinating with asbestos abatement personnel. Duration: 45 minutes.

2. EXAMINATIONS

The department shall administer a closed book examination or designate other entities such as department-approved training courses to administer the closed book examination to persons seeking certification who have completed an initial training course. Demonstration testing may also be included as part of the examination. A person seeking certification in a specific job classification shall pass the examination for that classification to receive certification. For example, a person seeking certification as an inspector must pass the department-approved inspector certification examination.

Each examination shall adequately cover the topics included in the training course for that classification. Persons who pass the department-approved examination and fulfill whatever other requirements the department imposes shall receive an identification card indicating that they are certified in a specific classification.

The following are the requirements for examinations in each area:

1. Asbestos Inspectors- 50 multiple choice questions, 70% passing score.

2. Asbestos Management Planners- 50 multiple choice questions, 70% passing score.

3. Asbestos Supervisors- 100 multiple choice questions, 70% passing score.

4. Asbestos Worker- 50 multiple choice questions, 70% passing score.

5. Project Designer- 100 multiple choice questions, 70% passing score.

6. Roofing Worker - 35 multiple choice questions, 70% passing score.

7. Roofing Supervisor - 50 multiple choice questions, 70% passing score.

3. REFRESHER TRAINING COURSES

An annual refresher training course for recertification shall be one day in length except for the inspector, roofing supervisor and roofing worker classifications. Refresher courses for inspectors, roofing supervisors and roofing workers shall be a half-day in length. Management planners shall attend the inspector refresher course, plus an additional half-day on management planning.

The refresher course shall be specific to each classification. For each classification, the refresher course shall review and discuss changes in federal and state regulations, developments in state-of-the-art procedures and a review of key aspects of the initial training course as determined by the department. After completing the annual refresher course, persons shall have their certification extended an additional year. The department may consider requiring persons to pass reaccreditation examinations at specific intervals.

4. QUALIFICATIONS

In addition to training and an examination, the department may require whatever