

Section 36

Asbestos

36.1 Scope

This section applies to Bureau of Reclamation facilities to protect employees performing Class I, II, III, and IV asbestos work operations from occupational asbestos exposure covered in Federal Occupational Safety and Health Standards (OSHA) 29 CFR 1926.1101, *Asbestos*. This section does not apply to asbestos-containing asphalt roof coatings, cements, and mastics. Other work operations with potential exposure to asbestos, that do not fall under Class I- IV work, shall follow the requirements outlined in OSHA 29 CFR 1910.1001, *Asbestos*.

36.2 General Requirements

36.2.1 Permissible Exposure and Excursion Limits

Reclamation's goal is to eliminate or reduce employee exposure to asbestos containing materials (ACM). No employee shall be exposed above the permissible exposure limit (PEL) of 0.1 fiber per cubic centimeter (f/cc) of air as an 8-hour time weighted-average (TWA), or the excursion limit (EL) of 1.0 f/cc averaged over a 30-minute sampling period, analyzed by the methods outlined in OSHA 1926.1101, Appendix A, or other equivalent method.

36.2.2 Asbestos Containing Material

In the absence of analytical data to the contrary, all Reclamation staff and facilities must treat all thermal system insulation (TSI), sprayed/troweled-on surfacing materials, and resilient flooring material installed before 1980 as ACM.

36.2.3 Asbestos Disposal

Asbestos disposal requirements shall follow the Federal/State/local regulations where the site/facility is located.

36.3 Responsibilities

36.3.1 Area Office Managers/Facility Managers

- 36.3.1.1** Shall select a competent person(s) (CP) who can identify asbestos hazards and has the authority to correct these hazards.
- 36.3.1.2** Shall provide the necessary resources to implement and maintain the procedures within this section.

36.3.2 Competent Persons

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- 36.3.2.1** Shall complete a training course for Class I-II work that meets the criteria of the Environmental Protection Agency's (EPA) Model Accreditation Plan (40 CFR part 763, Subpart E, Appendix C) for supervisors, or a course that is equivalent in stringency, content, and length.
- 36.3.2.2** Shall complete a training course for Class III-IV work that is consistent with EPA requirements for training of local education agency maintenance and custodial staff in 40 CFR 763.92(a)(2), or its equivalent in stringency, content, and length.
- 36.3.2.3** Shall conduct inspections for Class I work during each shift or at an employee's request.
- 36.3.2.4** Shall perform or oversee the following duties for Class I or II asbestos work:
- setup of the regulated area, enclosure, or other containment and periodically inspect its integrity during the job task(s),
 - setup procedures to control entry to and exit from the enclosure and/or area,
 - in consultation with the regional/local industrial hygienist, shall oversee all employee exposure monitoring to appropriately address all elements of this section,
 - ensure employees working within the containment area and/or using glove bags wear respirators and protective clothing,
 - ensure employees use hygiene facilities and follow decontamination procedures, and
 - ensure that that engineering controls are set up and working properly, and employees are using proper work practices and personal protective equipment (PPE).
- 36.3.2.5** Shall oversee all asbestos work performed within regulated areas.
- 36.3.2.6** Shall maintain the site inventory of presumed asbestos containing building material (PACM) and ACM that includes location, type of material, quantity, and condition of the material.
- 36.3.2.7** Shall coordinate with the first-line supervisor and the regional/local industrial hygienist to review asbestos work plans for conducting an exposure assessment before, or during, asbestos operations to identify expected asbestos exposures.
- 36.3.2.8** Shall examine protective clothing during asbestos work operations at least once per shift immediately repairing damages or replacing them.
- 36.3.2.9** Shall conduct and coordinate with the regional/local industrial hygienist to perform air monitoring for exposure assessments or provide objective data for a negative exposure assessment.

- 36.3.2.10** Shall receive the appropriate asbestos training and/or air monitoring certifications if required by states where they are performing work.
- 36.3.2.11** Shall review the job hazard analysis (JHA) and/or asbestos work-plan with the first-line supervisor before conducting the asbestos job task(s) and follow the identified precautions.
- 36.3.2.12** Shall send employee monitoring results to the regional/local industrial hygienist for review.

36.3.3 First-Line Supervisors

- 36.3.3.1** Shall ensure employees receive training according to paragraph 36.4, *Training* of this Reclamation Safety and Health Standard (RSHS), before performing Class I-IV asbestos work and that they are aware of any ACM and/or PACM identified in the site inventory.
- 36.3.3.2** Shall notify the CP of asbestos work at least 2 weeks before the start of the job or immediately upon becoming aware of emergency asbestos work.
- 36.3.3.3** Shall coordinate with the CP, and/or the regional/local industrial hygienist, any required medical exams for their employees performing asbestos work as outlined in paragraph 36.9.7, *Medical Surveillance*.
- 36.3.3.4** Shall coordinate with the CP to ensure products and containers holding asbestos and asbestos waste are labeled according to paragraph 36.9.5, *Labeling*.
- 36.3.3.5** Shall ensure the JHA includes the appropriate elements in paragraph 36.9.1, *Workplan Elements*, and review the JHA with the employees before starting asbestos work operations.

36.3.4 Class I – IV Asbestos Workers

- 36.3.4.1** Shall complete the training requirements in paragraph 36.4.
- 36.3.4.2** Shall review the JHA and asbestos workplan with the first-line supervisor and/or the CP before conducting the asbestos job task(s) and follow the identified precautions.
- 36.3.4.3** Shall initiate stop work procedures when necessary.
- 36.3.4.4** Shall complete baseline medical and periodic exams as required by paragraph 36.9.7 and RSHS Section 32, *Respiratory Protection Program*.

36.3.5 Regional Safety Manager

36.3.5.1 Shall assist in developing and establishing an asbestos program, when requested, and coordinate periodic spot checks to ensure compliance with this section.

36.3.6 Regional and Local Industrial Hygienists

36.3.6.1 Shall provide technical assistance to the CP such as exposure monitoring, medical surveillance, engineering control(s) evaluation, objective data documentation, respirator selection, and fit testing.

36.3.6.2 Shall receive the appropriate asbestos training and/or air monitoring certifications if required by states where they are performing work.

36.3.6.3 Shall review employee monitoring results performed by the CP to appropriately address elements of this section.

36.3.7 Project Managers/Acquisitions

36.3.7.1 Shall coordinate with the regional safety office, as necessary, in the selection of contractors who answer solicitations to perform asbestos abatement activities before final selection.

36.3.7.2 Shall ensure the following minimum elements are in the solicitation package that contractors need to provide for asbestos abatement activities:

- license for asbestos abatement work for the location where the work will be performed,
- insurance and binders for asbestos abatement, and
- detailed 5-year history of all Federal/State OSHA, EPA, and Air Management Agency citation history.

36.3.8 Human Resources Officers (HRO)

36.3.8.1 Shall maintain any medical examination results, clearance documentation, and employee exposure monitoring records in the employee's medical folder according to paragraph 36.9.7.5.1, *Medical Monitoring Records* of this section; 29 CFR 1910.1020(d)(1), *Access to Employee Exposure and Medical Records*; the Privacy Act of 1974 (P.L. 93-579); and provide the regional/local industrial hygienist, the CP, or first-line supervisor with the clearance results, as requested.

36.3.9 Joint Host and Contract Employer

36.3.9.1 The site/facility shall inform contractors performing work at their locations of the types and quantities of all ACM and/or PACM in their work area they may encounter during their job task(s).

- 36.3.9.2** The contractor shall stop work if ACM or suspected ACM is discovered and no provision for asbestos work is in the contract solicitation. The contracting officer shall decide whether to continue or not.
- 36.3.9.3** The contract employer and/or the site/facility may designate a material previously documented as PACM as non-ACM if testing validates and supports that the material does not contain more than 1 percent asbestos. Testing shall include analysis of bulk samples collected as described in 40 CFR 763.86, *Sampling*. The CP shall keep the information, data, and analysis supporting the determination that PACM does not contain asbestos.
- 36.3.9.4** Contractors shall have a CP for worksites where ACM/PACM may be found and shall include the CP's qualifications in their site safety and health plans.

36.4 Training Requirements

36.4.1 Class I and II Workers

Training for Class I and Class II operations using critical barriers or equivalent isolation methods, and/or negative pressure enclosures shall be equal to the curriculum, training method, and length outlined in the EPA Model Accreditation Plan asbestos abatement workers training (40 CFR Part 763, Subpart E, Appendix C). Courses must be conducted by an EPA-approved or State-approved training provider; certified by EPA or the State; and be equivalent in stringency, content, and length (i.e., 5 days, at least 14 hours of hands-on training).

36.4.2 Class II Additional Requirements

In addition to the requirements in paragraph 36.4.1, *Class I and II Workers* of this RSHS, all work with asbestos-containing roofing materials, flooring materials, siding materials, ceiling tiles, or transite panels, shall meet the specific work practices and engineering controls specifically used for the job task(s). The course shall include 8 hours of hands-on training.

36.4.3 Class III Workers

Training for Class III work shall be consistent with EPA requirements in 40 CFR 763.92(a)(2) for maintenance and custodial staff and include 16 hours of hands-on training.

36.4.4 Class IV Workers

Training shall be consistent with EPA requirements in 40 CFR 763.92(a)(1) for maintenance and custodial staff and shall include at least 2 hours of instruction.

36.4.5 Awareness Training for Employees Not Performing Class I-IV Work

The JHA that contains the requirements of this section shall identify employees with potential exposure above the PEL, and shall receive training on the following:

- adverse health effects of asbestos exposure,
- the relationship between smoking and asbestos in causing lung cancer,
- operations that could result in asbestos exposure and the importance of protective controls,
- the purpose, proper use, fitting instructions, and limitations of respirators,
- appropriate work practices for performing asbestos jobs,
- medical surveillance program requirements,
- the contents of the OSHA asbestos standard,
- the names, addresses, and phone numbers of public health organizations that provide information and materials or conduct smoking-cessation programs, and
- the required signs and labels and their meanings.

36.4.6 Competent Person Training

CPs shall complete a training course that meets the criteria of EPA's Model Accreditation Plan for supervisors, and a course for Class III and Class IV work that is consistent with EPA requirements local education agency maintenance and custodial staff training in 40 CFR 763.92(a)(2).

36.4.7 Refresher/Recertification

CPs and employees performing Class I-IV work shall receive annual training to maintain certification requirements.

36.4.8 Lack of Proficiency

Retraining is necessary when the CP or an employee performing Class I-IV work demonstrates a lack of knowledge of asbestos work practices or the program elements in this section.

36.4.9 Recordkeeping

All training records shall be kept in the Department of the Interior's approved repository and managed in accordance with the Information Management Handbook as referenced in Reclamation Manual Directive and Standard, *Information Management* (RCD 05-01).

36.5 Hazard Identification, Assessment, and Safety Measures

36.5.1 Hazard Identification and Assessment

36.5.1.1 Inventory

The CP shall coordinate bulk sampling where there is the probability for ACM and maintain an inventory of known ACM locations for each site/facility they are responsible for.

36.5.2 Safety Measures

36.5.2.1 Hierarchy of Controls

The first-line supervisor and the CP shall review the JHA/asbestos work plan to identify the appropriate controls, below, to reduce asbestos exposure below the PEL and/or EL when performing asbestos work activities:

- enclose or isolate processes producing asbestos dust,
- provide a portable air ventilation system equipped with a high-efficiency particulate air (HEPA) filter to provide negative air pressure preventing airborne asbestos from escaping from the enclosure,
- implement engineering and work practices to reduce exposures to the lowest possible level and supplement with respiratory protection,
- equip vacuum cleaners with HEPA filters to collect debris and dust from the work area after asbestos removal,
- use wet methods or appropriate alternatives if they do not cause electrical hazards, equipment malfunction, slipping hazards, or other hazards,
- establish hygiene facilities outlined in paragraph 36.8, *Hygiene Facilities*, and
- promptly clean up and dispose of asbestos-contaminated wastes and debris in sealed, labeled, impermeable bags (minimum 6 mil thickness) or other closed, labeled, leak-tight containers.

36.5.2.2 Prohibited Work Practices

The CP, in coordination with the first-line supervisor, shall implement the following work practices so ACM or PACM is not disturbed, regardless of any measured asbestos exposure levels:

- no high-speed abrasive disc saws used not equipped with point-of-cut ventilator or enclosures with HEPA filtered exhaust,
- no compressed air use to remove ACM, unless it is used within an enclosed ventilation system designed to capture the dust cloud created by the compressed air,
- no dry sweeping, shoveling, or other dry clean-up of dust, and debris containing ACM and/or PACM, and
- no employee rotation as a means of reducing employee exposure to asbestos.

36.6 Pre-job Briefing and Planning Requirements

36.6.1 JHA

The first-line supervisor, in coordination with the CP, shall ensure Class I-IV asbestos work operations have a written JHA that includes the appropriate elements in paragraph 36.9.1, *Workplan Elements* of this RSHS, and shall review the JHA with employees before starting asbestos work operations.

36.7 Personal Protective Equipment (PPE)

36.7.1 Respiratory Protection

The CP, in coordination with the first-line supervisor, shall ensure employees wear respiratory protection in the following instances and adhere to the requirements in RSHS Section 32, *Respiratory Protection Program*:

- Class I work,
- Class II and III work performed, not using wet methods with the exception or removal of ACM from sloped roofs, when a negative exposure assessment has been conducted and ACM is removed in an intact state,
- Class II and III asbestos work for which a negative exposure assessment has not been conducted,
- Class III asbestos work when TSI or surfacing ACM or PACM is disturbed,
- Class IV asbestos work performed within regulated areas where employees performing other work are required to use respirators, and
- work operations covered by this section where employees are exposed above the PEL or EL, or in emergencies such as an asbestos spill or an emergency clean-up.

36.7.2 Protective Clothing

36.7.2.1 Class I Work Requirements

The CP shall ensure Reclamation employees use protective clothing when exposed to airborne concentrations of asbestos that exceed the PEL and/or EL or for Class I work that involves the removal of over 25 linear or 10 square feet of TSI, or surfacing ACM and PACM where a negative assessment has not been completed.

36.7.2.2 Laundering of Contaminated Clothing

The CP shall inform the offsite professional laundering service, if used, that the clothing was used for asbestos work and ensure contaminated clothing is transported in sealed impermeable bags, or other closed impermeable containers, and labeled according to paragraph 36.9.5.1, *Products, Bags and Containers with Asbestos* of this RSHS.

36.8 Hygiene Facilities

36.8.1 Requirements for Class I Reclamation Asbestos Work Activities

The CP shall set up a decontamination area for asbestos job tasks involving more than 25 linear or 10 square feet of TSI or surfacing ACM and PACM. The decontamination area shall include an equipment room, shower area, and a clean room, set up in series, for the asbestos workers to enter and exit from.

36.8.1.1 Equipment Room

The CP shall ensure the equipment room has impermeable bags or containers for disposing protective clothing.

36.8.1.2 Shower Area

The CP shall ensure the shower area meets the requirements in OSHA 1910.141(d)(3) and is set up adjacent to the equipment and clean rooms. If there is not a feasible location for the shower area adjacent to the work area, then the CP shall ensure asbestos workers:

- use a HEPA vacuum to remove any asbestos contamination from their protective clothing before they enter the shower area, or
- remove their contaminated clothing in the equipment room and put on clean protective clothing before they enter the shower area.

36.8.1.3 Clean Room

The CP shall ensure the clean room has an appropriate storage container for each asbestos worker. If it is not feasible to provide a clean change area adjacent to the work area or where the employee performs the work outdoors, then asbestos workers may clean their protective clothing using a HEPA vacuum before leaving the regulated area. The asbestos workers must shower and change into their street clothing in the clean room.

36.8.2 Requirements of Class II-III Reclamation Asbestos Work Activities

The CP shall ensure that activities involving less than 25 linear or 10 square feet of TSI or surfacing ACM and PACM, and for Class II-III asbestos work operations where exposures exceed the PEL or there was no negative exposure assessment, shall include the following:

- an equipment room/area by the regulated area for the decontamination of employees, protective work clothing, asbestos contaminated equipment, and has an impermeable drop cloth on the floor or horizontal working surface,
- an area large enough to allow equipment cleaning and removing PPE without spreading contamination beyond the area, and
- means to clean used equipment and surfaces of containers holding ACM debris before removal from the equipment room/area.

36.8.3 Requirements for Class Reclamation IV Work Activities

Employees performing Class IV work within a regulated area must follow the same hygiene practices required of those employees with the higher classification.

36.8.4 Smoking in Work Areas

Employees shall not smoke in any work areas where there may be occupational asbestos exposures.

36.9 Safe Practices

36.9.1 Asbestos Workplan Elements

The first-line supervisor and the CP shall ensure that Class I-III operations have an asbestos work-plan in place, or is part of the JHA, before starting asbestos work with the following minimum elements:

- physical description of the work area,
- description of the approximate type and amount of ACM for removal,
- schedule for turning off and sealing existing ventilation systems,
- employee hygiene procedures,
- description of PPE and protective clothing worn,
- description of the local exhaust ventilation system(s) used, including testing requirements,
- description of required employee work practices,
- an air monitoring plan for exposure assessment, and
- description of waste material for transport and disposal.

36.9.2 Regulated Areas

36.9.2.1 Class I-III Asbestos Work

The CP shall ensure that Class I-III asbestos work conducted within regulated areas has visible warning signs at a distance so that employees can read the signs and take the necessary protective steps before entering. The warning signs shall include the following information when respirators are required in regulated areas:

WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS
AREA

DANGER ASBESTOS

MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS

AUTHORIZED PERSONNEL ONLY

36.9.2.2 Hygiene Practices

The CP shall ensure employees in regulated areas do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics within regulated areas.

36.9.2.3 Regulated Area Supervision

The CP shall supervise asbestos work performed within regulated areas.

36.9.3 Exposure Assessments and Monitoring

36.9.3.1 General Monitoring Requirements

The CP, in coordination with the regional/local industrial hygienist, shall conduct air monitoring during asbestos work activities. Air monitoring data shall represent an 8-

hour TWA full shift exposure of the employees in the work area. In addition, the CP, in coordination with the regional/local industrial hygienist, shall conduct short-term employee exposure monitoring, lasting 30 minutes, during work activities that are most likely to produce exposures above the EL for employees in each work area.

36.9.3.2 Initial Exposure Assessment

The CP, in coordination with the regional/local industrial hygienist, shall conduct an exposure assessment immediately before or at the initiation of the asbestos work operation(s) to determine expected exposures. The CP and/or the regional/local industrial hygienist must complete the assessment in time to comply with requirements that are triggered by exposure data or the lack of a negative exposure assessment outlined in paragraph 36.9.4, *Negative Exposure Assessment* of this RSHS, and to provide information necessary to assure that all control systems planned are appropriate for that operation and are working properly.

36.9.3.2.1 Assessment Elements. The assessment shall consider monitoring results and observations, information, and calculations indicating employee asbestos exposure, and shall include any previous monitoring or other operations that indicate the levels of airborne asbestos likely to be encountered on the job.

36.9.3.2.2 Class I Work Requirement. Until the CP and/or the regional/local industrial hygienist conducts exposure monitoring or a negative exposure assessment, employees are considered exposed to asbestos above the PEL or EL.

36.9.3.3 Observation of Monitoring

The CP, in coordination with the regional/local industrial hygienist, shall ensure that employees involved in asbestos work activities and their designated representative may observe any monitoring to determine employee exposure. The observer must wear proper PPE and follow all safety procedures if they enter the area to observe the monitoring.

36.9.3.4 Employee Notification of Monitoring Results

The regional/local industrial hygienist and/or the CP shall contact affected employees ensuring and notify them in writing within 5 working days after their monitoring results were received by either the CP, the regional/local industrial hygienist, or the first-line supervisor.

36.9.3.5 Recordkeeping

The regional/local industrial hygienist and/or the CP shall ensure monitoring records of an employee's potential asbestos exposure contain the following elements:

- job task(s) monitored and date,
- sampling/analytical method used,
- number of samples and the length of time for each sample,
- type of respiratory protection used and any other PPE, and
- employee(s) name and their individual sample results.

36.9.4 Negative Exposure Assessment

The CP, in coordination with the regional/local industrial hygienist, may demonstrate employee exposure(s) for specific asbestos job task(s) performed by Class I-IV employees are below the PEL and EL by documenting that asbestos fibers cannot be released, using prior exposure monitoring results, or using objective data as outlined below. The CP must keep documentation in a manner that is readily accessible upon request.

36.9.4.1 No Asbestos Fiber Release

The CP, in coordination with the regional/local industrial hygienist, must provide documentation that the product/material containing asbestos or the activity involving the product/material cannot release airborne fibers in concentrations exceeding the PEL and EL under those work conditions having the greatest potential for releasing asbestos.

36.9.4.2 Prior Monitoring for Asbestos Job Tasks

The CP, in coordination with the regional/local industrial hygienist, must provide documentation that prior asbestos job tasks were monitored for the PEL and EL within 12 months of the current or projected job and the data was obtained during work operations/workplace conditions that meet the following:

- must closely resemble the processes, type of material, control methods, work practices, and environmental conditions that exist in the site's current operations,
- the operations performed by employees whose training and experience are no more extensive than that of employees performing the current job,
- the data shows that under the conditions in the current workplace there is a high degree of certainty that employee exposures will not exceed the PEL and EL, and
- the results of initial exposure employee monitoring for the current job are representative of the PEL and EL for each employee job tasks performed during the entire asbestos job.

36.9.4.3 Objective Data

The CP, in coordination with the regional/local industrial hygienist, shall use objective data to show the products made from or containing asbestos, or the activity using those products/material are not capable of releasing asbestos fibers at or above the

PEL or EL under the expected work conditions. The objective data must contain the following elements:

- the product qualifying for the exemption,
- the source of objective data,
- the testing protocol, results of testing, and/or analysis of the material for the release of asbestos fibers,
- description of the operation exempted and how the data supported the exemption, and
- other data relevant to the operations, materials, processing, or employee exposures covered by the exemption.

36.9.5 Labeling

36.9.5.1 Products, Bags and Containers with Asbestos

The CP shall ensure that bags or containers of protective clothing and equipment used during asbestos operations, asbestos scrap/waste, and if feasible, products containing asbestos are labeled with the following information:

DANGER

CONTAINS ASBESTOS FIBERS DO NOT BREATHE DUST AVOID CREATING DUST

CANCER AND LUNG DISEASE HAZARD

36.9.5.2 Labeling Exceptions

Labels are not required when asbestos fibers have been modified by a bonding agent, coating or other material, or the manufacturer documents that airborne asbestos fibers will be not released above the PEL and/or EL when used reasonably, and the product contains less than 1 percent asbestos.

36.9.5.3 Labeling/Signs for Installed PACM and ACM

The CP and first-line supervisor shall coordinate labeling/signage of previously identified ACM and/or PACM so employees with likely exposure are aware of its location(s) when entering the area.

36.9.6 Housekeeping

36.9.6.1 Vacuuming Equipment

The CP, in coordination with the first-line supervisor, shall ensure vacuums used during asbestos work are equipped with a HEPA filter and used/emptied in a way that minimizes the reentry of asbestos into the workplace.

36.9.6.2 Flooring Containing ACM

Reclamation prohibits sanding of asbestos-containing flooring and employees must use wet methods for stripping finishes using low abrasion pads at speeds less than 300 rpm.

36.9.7 Medical Surveillance

36.9.7.1 Medical Surveillance for Class I-III Workers

The regional/local industrial hygienist, in coordination with CP, shall establish a medical surveillance program for employees performing Class I, II, and/or III work for 30 or more days per year or are exposed at or above the PEL. On any day employees performing Class II and/or Class III operations on intact material for 1 hour or less (that includes the time spent on removal and cleanup operations) and follows the work practices of this section does not count towards the 30-day threshold.

36.9.7.2 Medical Examinations

The first-line supervisor, in coordination with the CP and/or the regional/local industrial hygienist, shall ensure their employees covered in paragraph 36.9.7.1, *Medical Surveillance for Class I-III Workers* of this RSHS, receive medical exams and/or consultations by a licensed physician or under the supervision of a licensed physician as outlined below:

- before an assignment to an area requiring negative-pressure respirators,
- when an employee is assigned to an area where asbestos exposure may be at or above the PEL for 30 or more days per year, or perform Class I, II, or III work for a combined total of 30 or more days per year,
- within 10 working days following the thirtieth day of exposure, and annually thereafter, and
- when the physician determines that any of the exams should be provided more frequently than specified above.

36.9.7.3 Medical Examination Elements

The first-line supervisor, in coordination with the CP and/or the regional/local industrial hygienist, shall ensure the physician receives a description of the affected employee's duties as they relate to their asbestos exposure, their representative or anticipated exposure level, and the type of respiratory equipment and other PPE used or will be used. Medical exams shall include the following minimum elements:

- medical and work history with an emphasis on the pulmonary, cardiovascular, and gastrointestinal systems,
- a physical exam of the pulmonary and gastrointestinal systems, including a chest x-ray administered at the discretion of the physician, a pulmonary function test, and

- any other examinations or tests deemed necessary by the examining physician.

36.9.7.4 Physician's Written Opinion

The CP, the first-line supervisor, and the regional/local industrial hygienist shall receive the physician's written opinion and ensure the employee receives the opinion within 30 days. The written opinion shall be sent to the HRO and must adhere to the Privacy Act of 1974 (P.L. 93-579) and not include specific findings or diagnoses unrelated to occupational asbestos exposure.

36.9.7.4.1 Medical Exams and Monitoring Records Retention. The CP and/or first-line supervisor shall ensure any medical examination results, clearance documentation, and employee monitoring records are sent to the HRO and kept in the employee's medical file for the duration of the employee's employment, plus 30 years per 29 CFR 1910.1020, Access to Employee Exposure and Medical Records.

36.10 Definitions

Asbestos	Includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that has been chemically treated and/or altered. For purposes of this section, "asbestos" includes PACM.
ACM	Any material containing more than 1 percent asbestos.
Asbestos work	Work operations include demolition or salvage of structures where asbestos is present; removal or encapsulation of materials containing asbestos; construction, alteration, repair, maintenance, or renovation of structures or substrates containing asbestos; installation of products containing asbestos; asbestos spill/emergency cleanup; and transportation, disposal, storage, containment of housekeeping activities involving asbestos.
Class I asbestos work	Activities involving the removal of TSI and surfacing ACM and PACM.
Class II asbestos work	Activities involving the removal of ACM which is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.
Class III asbestos work	Work involving repair and maintenance operations, where ACM, including TSI and surfacing ACM and PACM, is likely to be disturbed.

Class IV asbestos work	Maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.
Competent person	Capable of identifying existing asbestos hazards in the workplace and selecting the appropriate control strategy for asbestos exposure, has the authority to take prompt corrective measures to eliminate them, as specified in 29 CFR 1926.32(f). In addition, for Class I and Class II, successfully completed a training course that meets the criteria of EPA's Model Accreditation Plan (40 CFR part 763) for supervisor, or its equivalent. For Class III and Class IV work, is trained in a manner consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92 (a)(2).
Disturb	Activities that disrupt the matrix of ACM or PACM, crumble or pulverize ACM or PACM, or generate visible debris from ACM or PACM. In no event shall the amount of disturbed ACM or PACM exceed that which can be contained in one glove bag or waste bag which shall not exceed 60 inches in length and width.
Employee exposure	Exposure to airborne asbestos that would occur if the employee were not using respiratory protective equipment.
Fiber	A particulate form of asbestos, 5 micrometers or longer, with a length-to-diameter ratio of at least 3 to 1.
Hierarchy of controls	A system used to minimize or eliminate hazards by classifying hazard controls according to effectiveness and prioritizing those controls that best limit the worker's exposure to the hazard.
High-efficiency particulate air (HEPA)	A filter capable of trapping and retaining at least 99.97 percent of all mono-dispersed particles of 0.3 micrometers in diameter.
PACM	Thermal system insulation and surfacing material found in buildings constructed no later than 1980.
Repair	Overhauling, rebuilding, reconstructing, or reconditioning of structures or substrates, including encapsulation or other repair of ACM or PACM attached to structures or substrates.
Surfacing material	Material sprayed, troweled-on, or otherwise applied to surfaces such as acoustical plaster on ceilings and fireproofing materials on structural members, or other materials on surfaces for acoustical, fireproofing, and other purposes.
Thermal system	ACM applied to pipes, fittings, boilers, breeching, tanks, ducts, or other structural components to prevent heat loss or gain.

**insulation
(TSI)**

36.11 References

Occupational Safety and Health Administration. 29 CFR 1926.1101, *Asbestos*.

<https://www.osha.gov/laws-regs/regulations/standardnumber/1926/1926.1101>

Occupational Safety and Health Administration. 29 CFR 1910.1020, *Access to Employee Exposure and Medical Records*.

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.1020>

Environmental Protection Agency. 40 CFR Part 763, *Asbestos*. [Code of Federal Regulations: Chapter 40, Part 763 -- Asbestos \(epa.gov\)](#)