SUMMARY OF
OSHA ASBESTOS STANDARD
29CFR1926.1101

Contents

(**a) Scope and Application**

(b) Definitions

Asbestos is defined as including chrysotile, amosite, tremolite asbestos, anthophyllite asbestos, and actinolite asbestos. In addition, **presumed asbestos containing material (PACM)** is also treated as asbestos. PACMs include **thermal system insulation (TSI)** and surfacing material found in buildings constructed no later than 1980.

Negative Exposure Assessment is defined as a demonstration by the employer that employee exposure during an operation is or will be consistently below the PELS.

Activities involving exposure to ACMs and PACMs have been divided into four classifications. They are as follows:

Class I asbestos work means activities involving the removal of TSI and surfacing ACM and PACM.

Class II asbestos work means activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos containing wallboard, floor tile and sheeting, roofing and side shingles, and construction mastics.

Class III asbestos work means repair and maintenance operations, where ACM is likely to be disturbed.

Class IV asbestos work means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM, and activities to clean up dust, waste, and debris result from Class I, II, and III activities.

(c) Permissible Exposure Limits

Permissible Exposure Limit (PEL) – The employer must ensure that no employee is exposed to airborne concentrations of asbestos greater than **0.1 f/cc** as measured over an eight hour time period.

Excursion Limit (EL) – The employer shall ensure that no employee is exposed to an airborne concentration of asbestos greater than **1.0 f/cc** as measured over a 30 minute period.

(d) Multi-employer Worksites

On multi-employer worksites, **an employer performing work requiring the establishment of a regulated area shall appropriately inform all other employers.**

Employers of employees working adjacent to regulated areas must take measures on a daily basis to ensure that their employees are not being exposed to asbestos fibers. All general contractors are responsible for ensuring that the asbestos contractor is in compliance with the standard.

(e) Regulated Areas

All Class I, II, and III work must be conducted within regulated areas. Other operations must be conducted within regulated areas whenever airborne concentrations of asbestos exceed the PEL. Regulated areas must comply with the following requirements:

Demarcation – Critical barriers, negative-pressure enclosures, and signs may all serve to demarcate the regulated area.

Access – Only authorized persons shall enter regulated areas.

Respirators – When respirators are required, all persons entering a regulated area must be supplied appropriate respirators.

Prohibited Activities – The employer shall ensure that employees do not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in the regulated area.

Competent Persons – The employer shall ensure that all asbestos work performed within regulated areas is supervised by a competent person.

(f) Exposure Assessments and Monitoring

1. General Monitoring

Employee exposure shall be determined from breathing zone air samples that are representative of the 8-hour and 30-minute exposures of each employee.

2. Initial Exposure Assessment

i. competent person shall conduct all exposure assessment immediately before or at the initiation of the operation to ascertain expected exposures.

ii. Unless a negative exposure assessment has been made, the initial exposure assessment shall be based on monitoring results. **For Class I work, the employer shall presume that employees are exposed in excess of the TWA and excursion limit until monitoring results or a negative exposure assessment document that the employees on the job will not be exposed in excess of the PEL.**

iii. Negative exposure assessment can be determined by:

A. objective data demonstrating that exposures cannot exceed the PEL/EL;

B. data obtained from previous similar jobs within the last 12 months; or

C. results of initial exposure monitoring.

3. **Periodic Monitoring...**
   - **i. Class I and II work – daily monitoring** is required unless negative exposure assessment.
   - **ii. Non-Class I and II work – periodic monitoring** where exposures are expected to exceed the PEL/EL.
   - **iii. Exception to monitoring –** when all employees are wearing supplied air respirators operated in the pressure-demand mode.
4. **Termination of Monitoring...**
   - **i.** allowed if statistically reliable results of monitoring show exposure levels to be below the PEL/EL.
   - **ii.** disallowed whenever there has been a change in process, control equipment, personnel, or work practices that may result in increased levels of exposure.
5. **Employee Notification of Monitoring Results...**
   - **i.** employees shall be notified as soon as possible as to monitoring results.
   - **ii.** notification shall be done in writing either individually or by posting at a centrally located place that is accessible to affected employees.
6. **Observation of Monitoring...**
   - **i.** employees and their representatives have the right to observe any monitoring.
   - **ii.** observers shall be provided with and required to wear any protective clothing and equipment applicable.

(g) Methods of Compliance

1. The following **engineering controls** and work practices are required for all ACM work, regardless of levels of exposure.
   - **i.** HEPA-vacuums.
   - **ii.** use of **wet methods** except where such methods create a greater hazard.
   - **iii.** prompt clean-up and disposal of waste in leak-tight containers except in some roofing operations.
2. In order to meet the PEL/EL, the following **control methods** are also required.
   - **i.** HEPA equipped local exhaust ventilation.
   - **ii.** enclosure/isolation of the work area.
   - **iii.** ventilation of the regulated area.
   - **iv.** other feasible work practices and engineering controls.
   - **v.** respirators to be used as supplemental measure.
3. **Prohibitions...**
   - **i.** high-speed abrasive disc saws not equipped with ventilator, or enclosures without HEPA filtered air.
   - **ii.** compressed air, unless used in conjunction with an enclosed ventilation system designed to capture the dust cloud created.
   - **iii.** dry sweeping, shoveling, or other dry clean-up methods.

iv. employee rotation as a means of reducing employee exposure.

4. **Class I Requirements...**
   - **i.** all work must be supervised by a competent person.
   - **ii.** One of the following methods must be used to assure airborne fibers do not migrate from the regulated area.
     - **A. critical barriers** placed over all openings to the regulated area except in outdoor situations.
     - **B.** other verifiable barrier or isolation methods.
   - **iii.** HVAC systems shall be isolated in the regulated area by sealing with a **double layer of 6 mil plastic.**
   - **iv.** impermeable dropcloths shall be placed beneath all removal activity.
5. **Specific Control methods for Class I Work...**
   - **i. Negative Pressure Enclosure (NPE) systems** shall be used whenever feasible.
     - **A. Specifications...**
       1. NPE may be of any configuration.
       2. **minimum of 4 air exchanges per hour.**
       3. minimum of -0.02 column inches of water pressure differential must be maintained.
       4. NPE shall be kept under negative pressure at all times.
       5. air shall be ventilated away from employees toward HEPA device.
     - **B. Work Practices...**
       1. NPE shall be inspected for breaches and smoke-tested for leaks before beginning work and at the beginning of each shift.
       2. electrical circuits in the enclosure shall be deactivated, unless equipped with **ground-fault circuit interrupters.**
   - **ii. Glovebag Systems** shall be used for removal from straight runs of piping and elbows and other connections.
     - **A. Specifications...**
       1. glovebags shall be made of 6 mil plastic and shall be seamless at the bottom.
       2. glovebags used on elbow and other connections must be designed for that purpose.
     - **B. Work Practices...**
       1. glovebag shall completely cover the circumference of the pipe.
       2. smoke-testing for leaks is required prior to use.
       3. glovebag may only be used once and cannot be moved.
       4. glovebag shall not be used on surfaces over **150°F.**
       5. prior to disposal, removal of air from glovebag using HEPA-vac is required.
       6. before beginning, loose and friable material adjacent to the work area shall be wrapped and sealed in two layers of 6 mil plastic.
       7. when using an attached waste bag, such a bag shall be connected to a collection bag using hose or other material which can withstand the weight of all waste.

8. a sliding valve or other device shall separate waste bag from hose to ensure no exposure during disconnection.
9. minimum of two persons shall perform Class I work. Other systems specified include: negative pressure glovebag; negative pressure glove box; water spray process; and mini-enclosure.

6. **Alternative control methods for Class I work** are allowed providing they are certified by a qualified individual.
7. **Work practices and engineering controls for Class II work**
   - **i** All work shall be supervised by a competent person.
   - **ii.** For all indoor Class II jobs without a negative exposure assessment, or where conditions changed during the job in such a way that the PEL/EL may be exceeded, or where the material is not removed in a substantially intact state, the employer shall use one of the following methods:
     - **A. critical barriers shall be used.**
     - **B.** alternative barrier or isolation methods are allowed as verified by perimeter area monitoring or clearance monitoring.
     - **C.** impermeable drop cloths shall be placed beneath all removal activity.
   - **iii.** reserved
   - **iv.** applicable work practices and requirements shall be followed.
8. **Additional controls for Class II work**
   - **i.** For removing **vinyl and asphalt flooring materials** containing ACM/PACM, the following practices apply…
     - **A.** flooring or its backing shall not be sanded.
     - **B.** vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) shall be used to clean floors.
     - **C.** resilient sheeting shall be removed by cutting with wet methods, rip-up methods are prohibited.
     - **D.** all scraping of residual adhesive and/or backing shall be done using wet methods.
     - **E.** dry sweeping is prohibited.
     - **F.** mechanical chipping is prohibited unless done in a negative pressure enclosure.
     - **G.** tiles shall be removed intact, unless employer demonstrates that intact removal is not possible.
     - **H.** when tiles are heated and can be removed intact, wetting may be omitted.
     - **I.** resilient flooring material including its mastic and backing shall be assumed to be an ACM unless proven otherwise by an industrial hygienist.
   - **ii.** For **removing roofing material** that are ACM, the following work practices apply…
     - **A.** roofing material shall be removed intact to the extent feasible.
     - **B.** wet methods shall be used to remove materials that are not intact, or will be rendered not intact, unless not feasible or will create safety hazards.
     - **C.** cutting machines shall be continuously misted during use, unless a

competent person determines that misting substantially decreases worker safety.

D. all loose dust left by sawing must be HEPA-vacuumed and bagged or placed in covered containers immediately.

E. ACM from a roof shall not be dropped or thrown to the ground:

1. ACM not intact shall be lowered to the ground as soon as practicable, no later than the end of the work shift. While on roof it shall either be kept wet or covered in plastic.

2. intact ACM shall be lowered to he ground as soon as practicable, no later that the end of the work shift.

F. after being lowered, unwrapped material shall be transferred to a closed receptacle

G. roof level heating and ventilation air intake sources shall be isolated or the ventilation system shall be shut down.

H. removal or repair of intact roofing less than 25 square feet in area (per day) does not require use of wet methods or HEPA vacuuming as long as material is not rendered non-intact. and no visible dust is created

iii. For **removal of cementitious asbestos-containing siding, shingles, or panels** on building exteriors other than roofs, the following work practices apply…

A. cutting, abrading, or breaking of siding, shingles, or **transite panels** shall be prohibited unless employer can demonstrate that other methods cannot be used.

B. each panel or shingle shall be sprayed wit amended water prior to removal.

C. unwrapped or unbagged panels or shingles shall be immediately lowered tot he ground via covered, dust-tight chute, crane or hoist, or placed in an impermeable waste bag or wrapped in plastic sheeting and lowered to the ground no later than the end of the work shift.

D. nails shall be cut with flat, sharp instruments.

iv. For removal of **gaskets** containing ACM, the following work practices apply…

A. if a gasket is visibly deteriorated and unlikely to be removed intact, removal shall be done with a glovebag.

B. reserved

C. the wet gasket shall be immediately placed in a disposal container.

D. scraping to remove residue must be performed using wet methods.

v. For **removal of any other Class II material,** the following work practices apply…

A. material shall be thoroughly wetted prior to and during removal.

B. material shall be removed intact unless the employer demonstrates that intact removal is impossible.

C. cutting, abrading, or breaking the material shall be prohibited unless the employer can demonstrate that other methods are not feasible.

D. material removed shall be immediately bagged, wrapped, or kept wetted until transferred to a closed receptacle no later than the end of

the work shift.

vi. Use of **alternative work practices** and controls are allowed if the following provisions are complied with…
   - **A.** employer shall demonstrate with representative data that employee exposure will not exceed the PEL/EL under any anticipated circumstances.
   - **B.** a competent person shall evaluate and certify in writing that the method meets necessary standards of operation.

9. **Work practices and engineering controls for Class III work...**
   - **i.** wet methods shall be used.
   - **ii.** whenever feasible, local exhaust ventilation shall be used.
   - **iii.** use of impermeable drop cloths and either min-enclosures or glovebags is required whenever drilling, cutting, abrading, sanding, chipping, breaking, or sawing TSI or surfacing materials.
   - **iv.** containment of work area is required when there is no negative exposure assessment or monitoring results show the PEL has been exceeded.
   - **v.** respirators are required if TSI or surfacing material is being disturbed, or if there is no negative exposure assessment, or if the PEL has been exceeded.

10. **Class IV work shall be conducted by employees who have completed an asbestos awareness training program.** In addition, Class IV work must be done using wet methods, HEPA-vac, and prompt clean-up of debris…
   - **i.** employees shall wear respirators when working in areas that require them.
   - **ii.** TSI and surfacing material waste and debris shall be assumed to be asbestos containing.

(h) Respiratory Protection

1. The employer **shall provide respirators** and ensure that they are used under the following circumstances…
   - **i.** all Class I work
   - **ii.** Class II work where the ACM is not removed in a substantially intact state
   - **iii.** Class II and III work performed without using wet methods
   - **iv.** Class II and III work where the employer does not produce a negative exposure assessment
   - **v.** Class III work where TSI or surfacing ACM/PACM is disturbed
   - **vi.** Class IV work performed in regulated areas where other employees are required to wear respirators
   - **vii.** when employees are exposed above the PEL/EL
   - **viii.** in emergencies

2. **Respirator Selection**
   - **i.** When used, appropriately selected **respirators are to be provided at no cost to the employee.** The employer shall ensure that the employee uses the respirator provided.

ii. **Respirators must be approved** by the National Institute for Occupational Health and Safety (NIOSH).

iii. **The employer shall provide a tight-fitting PAPR** in lieu of any negative-fitting respirator whenever:
   A. an employee chooses to use this type of respirator;
   B. the respirator will provide adequate protection; and
   C. the employer shall inform any employee required to wear a respirator of this right

iv. **The employer shall provide a non-disposable, half-mask, air-purifying respirator** for Class II and III work where there is no negative pressure assessment has been produced, and for Class III work where TSI or surfacing ACM/PACM is disturbed.

v. **The employer shall provide a tight-fitting PAPR or supplied-air, pressure-demand respirator for Class I work without a NEA in which exposure assessment indicates exposure level will not exceed 1 f/cc. A supplied-air, pressure-demand respirator is required if the exposure assessment indicates exposure levels above 1 f/cc.**

3. Respiratory Program

i. The employer shall institute a respiratory program whenever respirators are used.

ii. Employees are permitted to change filters whenever an **increase in breathing resistance** is detected.

iii. Employees are **permitted to leave work areas** to wash their faces and respirator facepieces whenever necessary to prevent skin irritation.

iv. If an employee's most recent physical examination indicates that respirator use would be unsafe, then the employee shall be assigned to another job of equal pay if such a position is available.

4. Respirator Fit Testing

i. Employer ensures that the respirator issued to the employee fits properly.

5. Either quantitative (QNFT) or qualitative (QLFT) fit tests are required at the time of initial fitting and at least annually thereafter for each employee wearing a respirator. The qualitative fit tests may only be used for fitting half-mask respirators or full-face respirators where they are worn at levels at which half-face respirators are permitted.

(i) Protective Clothing

1. Protective clothing is required for employees exposed to airborne asbestos in excess of the PEL/EL, or where negative exposure assessment is not produced, and for Class I work involving the removal of over 25 linear or 10 square feet of TSI or surfacing ACM/PACM.

2. Laundering shall be done by an informed individual in a manner that prevents the release of fibers in excess of the PEL/EL.

3. Contaminated clothing shall be transported in sealed, impermeable bags or containers and labeled appropriately.

4. Inspection of Protective Clothing…

i. a competent person shall examine worksuits at least once per workshift.

ii. rips and tears shall be immediately mended or the worksuit shall be immediately replaced.

(j) Hygiene Facilities and Practices

1. Requirements for Class I work involving over 25 linear or 10 square feet of TSI or surfacing ACM/PACM…

i. A decontamination area shall be established adjacent and connected to the regulated area. The employer shall ensure that employees enter and exit the regulated area through the decon.

A. Equipment (Dirty) Room

B. Shower area shall be located adjacent to the equipment room and the clean room. If the employer can demonstrate that it is not feasible to locate a shower there, then the employer must ensure that employees do not carry asbestos contamination outside the equipment room.

C. Clean change room shall be equipped with separate storage containers for each employee.

ii. Decontamination Entry Procedures...

A. enter through the clean room.

B. remove and deposit street clothing in lockers

C. put on protective clothing and respirator before leaving clean room.

D. before entering regulated area, employees must pass through the equipment room.

iii. Decontamination Exit Procedures...

A. before leaving the regulated area, remove all gross. contamination and debris from protective clothing.

B. remove protective clothing in the equipment room.

C. respirators shall not be removed in the equipment room.

D. employees shall shower prior to entering the clean room.

E. after showering, employees shall enter the clean room before changing into street clothes.

iv. Lunch Areas...

Whenever food or beverages are consumed at a Class I worksite, the employer shall provide a lunch area in which airborne concentrations of asbestos are below the PEL/EL.

2. Requirements for Class I work involving less that 25 linear or 10 square feet of TSI or surfacing ACM/PACM, and for Class II and Class III work where exposures exceed the PEL or EL or where the is no negative exposure assessment prior to operation.

i. Equipment room shall be established adjacent to the regulated area. It shall consist of an area covered by an impermeable drop cloth.

ii. The area must be large enough to accommodate cleaning of equipment and removing of personal protective equipment without spreading contamination.

iii. Work clothing must be cleaned with a HEPA-vacuum before it is removed.

iv. All equipment and surfaces of containers filled with ACM must be cleaned prior to removal from the area.

v. Employer shall ensure that employees enter and exit regulated area through the equipment (dirty) room.

3. Requirements for Class IV work are the same as those for Class I work involving less than 25 linear or 10 square feet of TSI or surfacing ACM/PACM unless the area in which the work is being done is part of a Class I operation involving greater than 25 linear or 10 square feet of TSI or surfacing ACM/PACM, in which case the more stringent requirements must be met.

4. No smoking is allowed in the work area.

(k) Communication of Hazards

1. For the purposes of this standard, employers and building owners are required to treat TSI and sprayed or troweled-on surfacing materials in buildings as ACM, wit the exception noted in this section. Asphalt and vinyl flooring material installed no later than 1980 must also considered to be ACM, unless proven otherwise. PACM is to be identified as ACM.

2. Duties of Building/Facility Owners...

i. determine the presence, location, and quantity of ACM/PACM prior to work.

ii. written or direct verbal notification as to the presence, location, and quantity of ACM/PACM must be made to:

A. prospective employers applying or bidding for work whose employees reasonably can be expected to work in or adjacent to areas containing such material;

B. employees of the owner who will work in or adjacent to areas containing such material;

C. on multi-employer worksites, all employers of employees who will be working within or adjacent to areas containing such material; and

D. tenants who will occupy areas containing such material.

3. Duties of employers whose employees perform work in or adjacent to areas containing ACM/PACM and duties of building/facility owners whose employees perform such work as follows:

i. employers shall identify the presence, location, and quantity of ACM/PACM prior to work;

ii. prior to work, employers shall inform the following persons of the location and quantity of ACM/PACM and the precautions to be taken –

A. owners of the building/facility

B. employees who will perform such work and employers of employees who work and/or will be working in adjacent areas – and

iii. employers shall, within 10 days of the completion of work, inform the building/facility owner and employers of employees who will be working in the area of the current location and quantity of ACM/PACM remaining in the area and final monitoring results, if any.

4. Employers who discover ACM/PACM on a worksite shall inform owners and other employees working at the site within 24 hours.
5. Criteria to rebut designation of PACM
   i. At any time an employer or building owner may demonstrate that PACM does not contain asbestos. This information does not have to be communicated; however, the information, data, and analysis supporting the determination on non-PACM shall be retained.
   ii. Means of demonstrating that PACM does not contain more than 1% asbestos are as follows:
      A. having a complete inspection conducted that demonstrates that the material is not ACM.
      B. testing of PACM includes analysis of bulk samples by an accredited inspector or CIH.
6. Signs shall be posted at the entrance to mechanical rooms/areas containing TSI, and surfacing ACM/PACM. Signs shall identify the material, its location, and appropriate work practices to avoid disturbing the material. The employer shall ensure that signs can be understood by employees.
7. **Signs...**
   i. warning signs shall be posted at an appropriate distance from regulated areas.
   ii. warning signs shall read –

DANGER
ASBESTOS
CANCER AND LUNG DISEASE HAZARD
AUTHORIZED PERSONNEL ONLY

when necessary, signs shall include –

RESPIRATORS AND PROTECTIVE CLOTHING
ARE REQUIRED IN THIS AREA

   iii. employer shall ensure that employees comprehend the warning signs.
8. **Labels...**
   i. labels shall be attached to all products containing asbestos and to all containers holding such products.
   ii. labels shall be printed in large, bold letters on a contrasting background.
   iii. labels shall read –

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

iv. reserved

vi. labels are not required where –

A. asbestos fibers have been modified by a bonding agent, coating, binder, or other material that will ensure that the PEL/EL will not be exceeded.

B. asbestos content is less that 1.0 % by weight.

vii. Labels shall be placed where they will clearly be noticed by employees. Appropriately placed may be posted instead of labels as long asa they contain all the necessary labeling information. the employer shall ensure that labels can be understood by employee.

9. Employee Information and Training

i. The employer shall institute, **at no cost to the employee, a training program for all employees** who are likely to be exposed in excess of a PEL and for all employees who install asbestos materials or preform **Class I** through asbestos operations. The employer shall ensure employees' participation.

ii. Training shall be provided prior to or at the time of initial assignment and annually thereafter.

iii. Training for Class I operations and for Class II operations that require the use of critical barriers and/or negative pressure enclosures shall be equivalent to the EPA Model Accreditation Plan (MAP) asbestos abatement worker training.

iv. Training for other Class II work...

A. Training for work involving ACM such as **roofing, flooring, siding, or transite panels** should include all of the elements listed in section (k)(9)(viii) and in addition, the work practices and engineering controls set forth in part (g) specific to that generic category. **This training shall include a "hands-on" section and shall take at least 8 hours.**

B. Employees working with more than one category of material shall receive training applicable to each category of material.

C. Employees working with materials not listed in section (k)(9)(iv)(A) shall be trained on the applicable work methods.

v. Training for Class III employees shall be consistent with EPA requirements for training local education agency maintenance and custodial staff as set forth at 40 CFR 763.92(a)(2). **This training shall include a "hands-on" section and take at least 16 hours.** At the discretion of the competent person, greater training requirements may apply.

vi. Training for employees performing Class IV operations shall be consistent with EPA requirements for training local education agency maintenance

and custodial staff as set forth at 40 CFR 763.92(a)(1). This course shall include information as to the location of TSI and ACM/PACM, and instruction in recognition of damage, deterioration, and delamination of ACM. **This course shall take at least 2 hours.**

vii. Training for employees who are likely to be exposed in excess of the PEL and are not otherwise required to be trained under paragraph (k)(9)(iii) through (vi) of this section, shall meet the requirements of paragraph (k)(9)(iii).

viii. Training programs shall be conducted in a manner that the employee is able to understand. In addition to EPA MAP curriculum, the course shall include the following information.

A. methods of recognizing asbestos.
B. health effects associated with asbestos exposure.
C. relationship between smoking and asbestos in producing lung cancer.
D. nature of operations that could result in exposure to asbestos, and the importance of necessary protective controls to minimize exposure.
E. purpose, proper use, fitting instructions, and limitations of respirators.
F. appropriate work practices.
G. medical surveillance program requirements.
H. content of this standard, including appendices.
I. names, addresses, and phone numbers of public health organizations which provide information concerning smoking cessation.
J. requirements for posting signs and affixing labels.

10. Access to Training Materials...

i. free, written materials relating to the employee training program.
ii. employer shall provide to the Assistant Secretary and the Director, upon request, all information and training materials relating to the employee information and training program.
iii. self-help smoking cessation programs shall be made readily available.

(l) Housekeeping

1. Vacuuming

Vacuums must be HEPA filtered.

2. Waste Disposal

All asbestos wasted and contaminated materials shall be disposed of in sealed, labeled, impermeable containers except in roofing operations where the procedures specified in (g)(8)(ii) of this section apply.

3. Care of Asbestos-containing Flooring Material...

i. all vinyl and asphalt flooring shall be maintained in accordance with this paragraph unless the owner demonstrates that the material is not asbestos containing.
ii. sanding is prohibited.

iii. stripping of finishes shall be done using low abrasion pads at speeds lower than 300 rpm and wet methods.

iv. burnishing or dry buffing may be performed only on flooring which has sufficient so that the pad cannot contact the flooring material.

4. **Waste and debris and accompanying dust** in an area with TSI or surfacing material or visibly deteriorated ACM:
   - **i.** shall not be dusted or swept dry, or vacuumed without using a HEPA filter; and
   - **ii.** shall be promptly cleaned up and disposed of in leak-tight containers.

(m) Medical Surveillance

1. **General**
   - **i. Employees covered...**
     - **A.** Employers shall institute programs that cover all employees who spend 30 or more days per year doing Class I, II, or III work; or are exposed at or above the permissible exposure limit for a combined 30 days or more per year. Any day in which a worker engages in Class II or Class III work for one hour or less, in accordance with work practices, shall not be counted.
     - **B.** For employees required to a negative pressure respirator, employers must, under the supervision of a physician, shall ensure employees are physically able to perform the work and use the equipment.
   - **ii. Examination...**
     - **A.** must be performed by a licensed physician at no cost to the employee.
     - **B.** anyone other than a licensed physician who administers the pulmonary function test shall complete a training course in spirometry.
2. **Medical Examinations...**
   - **i.** Examinations are to be conducted:
     - **A. prior to beginning of work with a negative pressure respirator.**
     - **B. within 10 working days following the 30th day of exposure** at or above the permissible exposure in one year, or when engaging in Class I, II, or III work for a combined total of 30 or more days per year.
     - **C. annually after initial exam**
     - **D.** if the examining physician determines that more frequent examinations are needed, employer shall provide such examinations.
     - **E.** no examination is required if employee records show that last examination was within the past 1-year period.
   - **ii. Medical examinations shall include:**
     - **A.** medical and work history **with special emphasis on pulmonary, cardiovascular, and gastrointestinal systems.**
     - **B. on initial exam,** the standardized questionnaire contained in Part 1 of

Appendix D; **on the annual examination,** the abbreviated standardized questionnaire contained in Part 2 of Appendix D.

C. physical examination directed at the pulmonary and gastrointestinal systems, and a pulmonary test.

D. any other examinations or tests deemed necessary by the physician.

3. The employer shall provide the following information to the examining physician…

i. copy of this standard and Appendices D, E, G, and I.

ii. description of the employee's duties as the relate to his/her exposure.

iii. employee's representative exposure level or anticipated exposure level.

iv. description of any personal protective and respiratory equipment used.

v. information from employee's previous medical exams.

4. Physician's Written Opinion...

i. Physician shall provide the employer with a written opinion containing the following information:

A. any medical conditions that would place the employee at an increased risk of material health impairment from exposure to asbestos.

B. any recommended limitations on the employee or on the use of personal protective equipment.

C. statement that the employee has been informed by the physician of the results of the examination and of any medical conditions that may result from asbestos exposure.

D. statement that the employee has been informed by the physician of the increased risk of lung cancer due to the combined effect of smoking and asbestos exposure.

ii. The employer shall instruct the physician not to reveal i the written opinion specific findings or diagnoses unrelated to the occupational exposure to asbestos.

iii. The employer shall provide a copy of the physician's written opinion tot he employee within 30 days of receipt.

(n) Recordkeeping

1. Objective data for negative exposure assessment…

i. When the employer has relied on objective data to demonstrate that a material and operation are not capable of releasing fibers of asbestos in concentration greater that the PEL/EL, then such records shall be maintained for the duration of the employer's reliance upon such objective data.

ii. records shall include the following information:

A. product qualifying for exemption;

B. source of the objective data;

C. testing protocol, test results;

D. description of the operation exempted; and

E. other relevant data.

iii. records shall be maintained for the duration of the employer's reliance upon such objective data.

2. **Exposure Assessments**
   Employer shall keep an accurate record of all measurements taken to monitor employee exposure. **These records shall be maintained for the duration of employment plus 30 years.**
3. **Medical Surveillance**
   Employer shall maintain an accurate record of each employee's medical surveillance for the duration of employment plus 30 years.
4. **Training records** shall be maintained for **1 year** beyond the last date of employment.
5. When the employer has relied on data to demonstrate that PACM is not asbestos-containing material, such data shall be maintained for as long as they are relied upon.
6. When the building owner has communicated and received information concerning identification, location, and quantity of ACM/PACM, written records of such notifications shall be maintained by the building owner for t he duration of ownership and shall be transferred to successive owners.
7. **Availability of Records...**
   i. upon written request, the employer shall make all records available to OSHA.
   ii. exposure records shall be made available to affected employees, former employees, and OSHA.
   iii. medical records shall be made available to the affected employees and anyone with written consent from the employee, and OSHA.
8. When employer ceases to do business and there is no successor to receive and retain the records for the prescribed period, the employer shall notify OSHA at least 90 days prior to disposal and, upon request, transmit them to NIOSH.

(o) Competent Person

1. On all construction sites covered by this standard, the employer shall designate a competent person.
2. **Competent person is required to conduct frequent and regular inspections of job sites, material, and equipment.**
3. **Class I jobs require on-site inspections at least once during each work shift, and at any time at employee request.** Class II, II, and IV jobs require on-site inspections at sufficient intervals to assess whether conditions have changed, and at any reasonable time at employee request.
   i. Class I and II worksites require a competent person to supervise the following duties...
   A. set up the regulated area, enclosure, or other containment.

B. ensure the integrity of the enclosure or containment.
C. set up procedures to control entry and exit from the enclosure and/or area.
D. supervise all employee exposure monitoring.
E. ensure that employees wear respirators and protective clothing as required.
F. ensure that employees set up and remove engineering controls, use work practices and personal protective equipment in compliance with all requirements.
G. ensure that employees use the hygiene facilities and observe the decontamination procedures.
H. ensure that engineering controls are functioning properly.
I. ensure that notification requirements are met.

4. Training for the Competent Person...

i. For Class I and II work, training shall meet the criteria of EPA's MAP (40 CFR 763, Subpart E, Appendix C).
ii. For Class III an d IV work, training shall be consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth in 40 CFR 763.92(a)(2).

■■■

Notes and Scribbles

Name _____ **ID#**_____

Respirator Hands-on Activity

☐ **Inspection: OK?**

	Yes	No
Respirator 1	☐	☐___
Respirator 2	☐	☐___
Respirator 3	☐	☐___
Respirator 4	☐	☐___

If "No", what is wrong?

A. Dirty
B. Missing Inhalation valve
C. Missing Exhalation valve
D. Torn strap/harness
E. Torn Inhalation valve
F. Improper filter pair

No more than on item per respirator. No item can be used more than once.

☐ **Donning & Doffing: Steps completed:**

- ☐ **Bend head slightly forward, place respirator under chin, and fasten strap at back of neck – position facepiece over mouth and nose – pull harness over head with the harness properly covering the crown of the head and no twisted straps.**
- ☐ **Perform negative seal check twice.**
- ☐ **Perform positive seal check twice.**
- ☐ **Remove or doff respirator by bending head over slightly, disconnecting the neck strap first, and then pulling harness over the top of the head – with the respirator resting in one hand.**

☐ **Washing and Storing a Respirator: Steps completed:**

- ☐ **Wash respirator and its parts thoroughly in a proper wash/ rinse sequence.**
- ☐ **Store complete respirator in a bag.**

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