

ENVIRONMENT, SAFETY & HEALTH DIVISION

Chapter 27: [Asbestos](#)

Quick Start Summary

Product ID: [491](#) | Revision ID: 2322 | Date published: 3 August 2021 | Date effective: 3 August 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/asbestosQuickstart.pdf>

1 Who needs to *know* about these requirements

The requirements of Asbestos apply to workers performing *asbestos work*, supervisors, *asbestos abatement subcontractors*, area and building managers, the asbestos program manager, Waste Management, and the Building Inspection Office. Asbestos work includes any work performed on buildings with *asbestos containing material (ACM)*, on vehicle brakes, or on asbestos-containing flooring. It also includes entry into areas where work is being done. The requirement to report worn flooring applies to all workers at SLAC.

2 Why

Inhaling high levels of asbestos fibers is known to cause asbestosis, lung cancer, and mesothelioma. When ACM is disturbed as a result of construction, maintenance, abatement, or normal wear and tear, asbestos fibers may become airborne. Asbestos fibers may also become airborne when released from deteriorating or damaged ACM.

3 What do I need to know

ACM known to be present in buildings is identified by signs near the entrances. Any work on ACM must be evaluated by the asbestos program manager and must be conducted only with all required controls in place, which include completing training, wearing personal protective equipment, ensuring no asbestos fibers become airborne, and contacting Waste Management to dispose of ACM. Worn asbestos-containing flooring must be reported to the building or area manager. Demolitions or renovations of buildings must be reviewed by the asbestos program manager.

4 When

These requirements take effect 3 August 2021.

5 Where do I find more information

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 27, “Asbestos”](#)

Or contact the [program manager](#).

Chapter 27

Asbestos

Product ID: [16](#) | Revision ID: [2321](#) | Date published: 3 August 2021 | Date effective: 3 August 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/pdfs/ESHch27.pdf>

1 Purpose

The purpose of this program is to ensure that worker exposure to asbestos remains below the *permissible exposure limit (PEL)* and that *asbestos containing material (ACM)* is properly handled and disposed of. It covers all work potentially involving ACM, from asbestos removal to cleaning flooring and replacing brake pads. It applies to workers performing *asbestos work*, supervisors, *asbestos abatement subcontractors*, area and building managers, the asbestos program manager, Waste Management, and the Building Inspection Office.

2 Roles and Responsibilities

Functional roles and general responsibilities for each role under this program are listed below. More detailed responsibilities and when they apply are provided in the procedures and requirements.

The roles may be performed by one or more individuals and one individual may play more than one role, depending on the structure of the organizations involved. Responsibilities may be delegated.

2.1 Worker

- Performs only asbestos work for which asbestos worker training is current and according to requirements of this chapter
- Except for employees of *asbestos abatement subcontractors*, never performs any *Class I* asbestos work, enters areas where Class I asbestos work is being performed, or assists asbestos subcontractors in performing asbestos work
- Reports flooring wear to the building manager and ensures flooring in work area is accessible during the annual wet waxing

2.2 Supervisor

- Ensures personnel are properly trained and qualified before work begins
- Notifies asbestos program manager before scheduling any *Class II* or *Class III* asbestos work

2.3 Asbestos Abatement Subcontractor

- Must be licensed in California

- Complies with all local, state, and federal regulations associated with asbestos work

2.4 Field Construction Manager

- May enter subcontractor-built asbestos containments where asbestos work is being done, subject to conditions (see [Asbestos: General Requirements](#))

2.5 Safety Services Representative

- May enter subcontractor-built asbestos containments where asbestos work is being done, subject to conditions (see [Asbestos: General Requirements](#))

2.6 Area / Building Manager

- Reports all damaged or otherwise disturbed ACM to the asbestos program manager (including asbestos-containing floor tiles damaged by routine use of office chairs)

2.7 Waste Management Group

- Coordinates disposal of all ACM waste and ensures waste packaging and transportation meet applicable regulatory requirements

2.8 Building Inspection Office

- Ensures that the asbestos program manager and the air quality program manager review all building renovation and demolition projects

2.9 Asbestos Program Manager

- Maintains certification as an asbestos work supervisor and carries out associated responsibilities for all asbestos work performed by SLAC employees
- Maintains certification as an asbestos building inspector
- Performs building, area, and facility inspections to characterize and identify ACM and maintains an inventory of all known ACM
- Characterizes asbestos exposure for activities performed at SLAC that may release asbestos fibers into the work environment
- Evaluates projects involving Class I, II, and III asbestos work and ensures the work is conducted to meet requirements
- Provides oversight and technical support for asbestos work performed by SLAC personnel and asbestos subcontractors
- Monitors as needed all Class II and III asbestos work sites not performed by an asbestos abatement subcontractor and maintains records of results

3 Procedures, Processes, and Requirements

These documents describe the detailed requirements for this program and how to implement them:

- [Asbestos: General Requirements](#) (SLAC-I-730-0A09S-034). Describes general hazard identification, work classification, and waste disposal requirements
- [Asbestos: Class II and Class III Asbestos Work Requirements](#) (SLAC-I-730-0A09S-035). Lists required controls for specific types of Class II and Class III asbestos work
- [Asbestos: Vehicle Brake Work Requirements](#) (SLAC-I-730-0A09S-005). Describes required controls for vehicle brake work
- [Asbestos: Asbestos Flooring Requirements](#) (SLAC-I-730-0A09S-006). Describes how to identify worn asbestos flooring and how to mitigate damage
- [Asbestos: Posting Requirements](#) (SLAC-I-730-0A09S-012). Describes posting requirements for asbestos hazards

These are the forms and tools for this program:

- [Asbestos Inventory](#). Database containing building-specific information on the presences of asbestos

4 Training

4.1 Asbestos Program Manager

To meet regulatory requirements ([40 CFR 763](#)) the asbestos program manager must complete the following certification courses and maintain certification by completing eight-hour refresher courses for the following functions annually:

- Building inspector
- Management planner
- Supervisor

4.2 Class II and Class III Asbestos Worker

Workers who perform Class II and Class III asbestos work must complete the following courses before performing any such work:

- ESH Course 105, Hazardous Waste Management ([ESH Course 105](#))
- ESH Course 152, Asbestos Class II and III Initial Training ([ESH Course 152](#))

Required annual retraining must be completed thereafter:

- ESH Course 105R, Haz Waste Management Refresher ([ESH Course 105R](#))
- ESH Course 151, Asbestos Class II and III Refresher Training ([ESH Course 151](#))

Workers who perform only abatement activities on asbestos-containing electric cables must complete the following course instead of ESH Course 152 and 151:

- ESH Course 153, Limited Class II Asbestos - Abatement of Asbestos Cables ([ESH Course 153](#)) (every 12 months)

4.3 Class IV or Unclassified Asbestos Worker

Workers who perform Class IV or unclassified asbestos work, such as vehicle brake and clutch replacement or cleaning and waxing of asbestos-containing floor tiles, must complete the following course:

- ESH Course 150, Asbestos Awareness ([ESH Course 150](#))

5 Definitions

abatement. Procedures to control fiber release from ACM, including removal, encapsulation and enclosure of ACM

asbestos. The asbestiform varieties of chrysotile, amosite, crocidolite, tremolite, anthophyllite, actinolite in any form, chemically treated and/or altered

asbestos abatement subcontractor. A registered contractor licensed by the state of California to perform asbestos work

asbestos containing material (ACM). Any material containing asbestos in an amount greater than one percent by weight

asbestos flooring. Resilient floor covering (asbestos-containing floor tiles, including asphalt and vinyl asbestos tile and sheet vinyl floor covering) containing more than one percent asbestos

asbestos, friable. ACM which can be crumbled, pulverized, or reduced to powder when dry, by hand pressure

asbestos work. The classification for asbestos work is

- *Class I.* Asbestos operations and activities involving the removal of *thermal system insulation (TSI)* and surfacing ACM and potential ACM
- *Class II.* Asbestos operations and activities involving the removal of ACM which is not friable asbestos, TSI or surfacing material, such as floor tiles, wallboard, and transite board
- *Class III.* repair and maintenance operations where ACM, including TSI and surfacing ACM and potential ACM, is likely to be disturbed
- *Class IV.* maintenance activities during which employees contact but do not disturb, cut, or damage ACM or potential ACM
- *Unclassified.* changing vehicle brakes or clutches (under a certain limit) or cleaning or waxing asbestos floor tiles

demolition. Wrecking, intentional burning, moving or dismantling of any load-supporting structural member, or portion thereof, of a building or facility

permissible exposure limit (PEL). “The maximum permitted 8-hour time-weighted average concentration” ([8 CCR 5155](#)) for a specific substance. Workers may not be exposed to concentrations over this limit. At SLAC the PEL for asbestos is 0.1 fibers per cubic centimeter, as set forth in [8 CCR 5208](#).

permissible exposure limit (PEL). A limit for personal exposure to a substance. The eight-hour

renovation. An operation other than demolition in which potential ACM is removed or stripped from any element of a building, structure, installation or portion thereof

thermal system insulation (TSI). Material in a building applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes

6 References

6.1 External Requirements

The following are the external requirements that apply to this program:

- Title 40, *Code of Federal Regulations*, “Protection of Environment”, Chapter 1, “Environmental Protection Agency (Continued)”, Subchapter R, “Toxic Substances Control Act”, Part 763, “Asbestos” ([40 CFR 763](#))
- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 4, “Construction Safety Orders”, Article 4, “Dusts, Fumes, Mists, Vapors, and Gases”, Section 1529, “Asbestos” ([8 CCR 1529](#))
- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 16, “Control of Hazardous Substances”, Article 110, “Regulated Carcinogens”, Section 5208, “Asbestos” ([8 CCR 5208](#))

6.2 Related Documents

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 17, “Hazardous Waste”](#)
- [Chapter 29, “Respiratory Protection”](#)
- [Chapter 30, “Air Quality”](#)
 - [Air Quality: Asbestos Notification Procedure](#) (SLAC-I-730-0A16C-001)
- [Chapter 56, “Respirable Crystalline Silica”](#)

Chapter 27: [Asbestos](#)

General Requirements

Product ID: [489](#) | Revision ID: 2324 | Date published: 3 August 2021 | Date effective: 3 August 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/asbestosReqGeneral.pdf>

1 Purpose

The purpose of these requirements is to ensure that *asbestos work* is accurately classified and that only trained and qualified personnel handle, remove, or otherwise disturb *asbestos containing material (ACM)*. They cover the identification of potential ACM, the classification of asbestos work, and the management of asbestos waste. They apply to workers performing asbestos work and their supervisors, area and building managers, the asbestos program manager, Waste Management, and the Building Inspection Office.

2 Requirements

2.1 Hazard Identification

The asbestos program manager must inspect each building at least once for asbestos and document the results in the [Asbestos Inventory](#). The asbestos program manager will ensure that the potential for an asbestos hazard is communicated to building and area managers and that the required warning signs are posted, as described in [Asbestos: Posting Requirements](#). Building and area managers must report damage to any ACM to the asbestos program manager (see [Asbestos: Asbestos Flooring Requirements](#)).

A job-specific inspection is required before every *demolition* or any *renovation* involving asbestos work. To this end, the Building Inspection Office (BIO) ensures that the asbestos program manager and the air quality program manager review all building renovation and demolition projects.

2.2 Work Classification and Requirements by Class

Asbestos work is classified as follows.

2.2.1 Class I Asbestos Work or Work that Requires an Asbestos Work Notification

Class I asbestos work and any work that requires a Bay Area Air Quality Management District (BAAQMD) work notification may only be performed by an *asbestos abatement subcontractor*. All other workers are prohibited from performing Class I work and from entering any area where Class I asbestos work is being performed.

The notification process is described in [Air Quality: Asbestos Notification Procedure](#). It is required for

- All demolition projects
- Renovations involving the abatement of friable ACM (or ACM that will become friable during removal) in amounts greater than or equal to 100 linear feet, 100 square feet, or 35 cubic feet
- Planned or actual renovations occurring within a time frame of no less than 30 days and no more than one year in which the total ACM removed is predicted to add up to a reportable quantity

2.2.2 Class II and Class III Asbestos Work

Class II and *Class III asbestos work* must be evaluated by the asbestos program manager before work begins and may *only* be performed by trained and qualified SLAC personnel or asbestos abatement subcontractors. See [Asbestos: Class II and Class III Asbestos Work Requirements](#) for required controls for such asbestos work as

- Removing electric cable
- Removing floor tiles
- Removing asbestos cement (transite) siding and roofing products
- Cutting asbestos cement (transite) pipe
- Removing wallboard
- Drilling into floor tiles
- Roof core removal, roof cutting

The asbestos program manager performs work site monitoring as needed for all Class II and III asbestos work not performed by an *asbestos abatement subcontractor*.

2.2.3 Class IV and Unclassified Asbestos Work

Class IV and *unclassified asbestos work* can only be performed by trained and qualified personnel.

- Class IV work includes maintenance activities during which employees contact but do not disturb, cut, or damage ACM or potential ACM
- Unclassified asbestos work includes changing vehicle brakes and clutches in a transportation shop in which five or fewer brakes are changed per week. (For requirements see [Asbestos: Vehicle Brake Work Requirements](#).) It also includes cleaning or waxing asbestos-containing floor tiles.

2.3 Waste Management

All asbestos-containing waste must be managed by [Waste Management](#), which must be contacted before conducting any work that could produce asbestos waste.

3 Forms

The following forms and systems are required by these requirements:

- [Asbestos Inventory](#). Database containing building-specific information on the presences of asbestos

4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- The asbestos program manager is responsible for maintaining the [Asbestos Inventory](#).
- The asbestos program manager maintains work site monitoring results for all Class II and III asbestos work not performed by an asbestos abatement subcontractor.

5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 27, “Asbestos”](#)
 - [Asbestos: Class II and Class III Asbestos Work Requirements](#) (SLAC-I-730-0A09S-035)
 - [Asbestos: Vehicle Brake Work Requirements](#) (SLAC-I-730-0A09S-005)
 - [Asbestos: Asbestos Flooring Requirements](#) (SLAC-I-730-0A09S-006)
 - [Asbestos: Posting Requirements](#) (SLAC-I-730-0A09S-012)
- [Chapter 17, “Hazardous Waste”](#)
- [Chapter 30, “Air Quality”](#)
 - [Air Quality: Asbestos Notification Procedure](#) (SLAC-I-730-0A16C-001)

Other SLAC Documents

- [Waste Management](#)

Other Documents

- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 4, “Construction Safety Orders”, Article 4, “Dusts, Fumes, Mists, Vapors, and Gases”, Section 1529, “Asbestos” ([8 CCR 1529](#))
- Title 8, *California Code of Regulations*, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 16, “Control of Hazardous Substances”, Article 110, “Regulated Carcinogens”, Section 5208, “Asbestos” ([8 CCR 5208](#))

Chapter 27: [Asbestos](#)

Class II and Class III Asbestos Work Requirements

Product ID: [490](#) | Revision ID: 2324 | Date published: 3 August 2021 | Date effective: 3 August 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/asbestosReqClass2.pdf>

1 Purpose

The purpose of these requirements is to ensure that worker exposure to asbestos remains below the *permissible exposure limit (PEL)* and that asbestos waste is properly handled and disposed of. These requirements cover *Class II* and *Class III asbestos work* and waste management and apply to workers and supervisors performing such work and the asbestos program manager.

2 Requirements

2.1 Monitoring

The asbestos program manager performs work site monitoring as needed for all Class II and III asbestos work not performed by an *asbestos abatement subcontractor*.

2.2 Listed Activities

All buildings and facilities built before 1981 are presumed to contain asbestos. *Asbestos containing material (ACM)* or *potential asbestos containing material (PACM)* used in the construction of SLAC buildings and facilities include

- Roofing material and patching compound
- Wallboard and joint compound
- Floor tiles, sheet flooring, and floor tile mastic
- Vehicle brake and clutch parts
- Glues and adhesives
- Acoustic ceiling and wall tiles
- Fire doors
- Electric cables
- Transite pipe and board
- Wall and ceiling insulation
- Machine and piping gaskets, vibration cloth, and cooling tower baffles

- Thermal system insulation (TSI) such as cement elbows and pipe wrap

For building-specific asbestos hazard information, see the [Asbestos Inventory](#) and/or contact the asbestos program manager.

The asbestos program manager has determined by air sampling that the following Class II and III asbestos work activities on buildings can be conducted without exceeding the PEL (negative exposure assessment). Nevertheless, all asbestos work must first be evaluated by the asbestos program manager – in particular any asbestos work not listed below.

Asbestos Work Activity	Required Controls	Waste Disposal
All Class II and III work	<ul style="list-style-type: none"> ▪ Contact asbestos program manager before beginning work (air sampling will be conducted as needed) ▪ The authorizing supervisor and workers must be current in all required asbestos training ▪ Do not use power tools except as noted below ▪ Wear gloves ▪ Clean wet dust with wet disposable towels promptly (do not allow any dust to dry or disperse) ▪ Additional controls as listed by activity below 	Obtain hazardous waste containment from Waste Management (WM) as appropriate <ul style="list-style-type: none"> ▪ Polyethylene waste bag, six millimeter thick (no DOT markings allowed) ▪ Drums, bins, hoppers Objects too large for a waste bag must be “burrito wrapped” with six millimeter polyethylene sheet (obtain from SLAC stores) Used gloves and disposable towels must be bagged with other asbestos waste. All asbestos waste must be disposed of by WM.
Removing floor tiles	<ul style="list-style-type: none"> ▪ Limit work to two hours per day or one waste bag ▪ Use spray bottle with soapy water to wet floor before and after removing floor tiles 	Fill waste bag no more than half full
Removing transite panels (30 percent asbestos)	<ul style="list-style-type: none"> ▪ Wet bolts using spray bottle with soapy water as they are being removed 	Avoid breaking panels; collect wet dust with a paper towel
Cutting transite pipe	<ul style="list-style-type: none"> ▪ Use only manual tools with a chain pipe cutter (snap cutter); do not use power tools ▪ Keep surfaces wet during work (use water hose) 	If too large for waste bag, “burrito wrap” and label Contact WM for guidance on proper storage and containment
Removing wallboard	<ul style="list-style-type: none"> ▪ Asbestos program manager must be present during work to take air samples 	If too large for waste bag, “burrito wrap” and label

Asbestos Work Activity	Required Controls	Waste Disposal
	<ul style="list-style-type: none"> ▪ Limit work so that none of these conditions are exceeded on any one day: one hour work, one bag of waste, a few square feet of wall board removed ▪ Wet area with spray bottle or Hudson sprayer with soapy water to wet before, during, and after wallboard removal ▪ Remove in large pieces if possible ▪ Do not break up wall board unless necessary 	Contact WM for guidance on proper storage and containment
Drilling into floor tiles	<ul style="list-style-type: none"> ▪ Limit number of holes drilled to 30 per day ▪ Wet floor before drilling using spray bottle with soapy water and to wet dust after drilling 	Collect wet dust with a paper towel
Roof core removal, roof cutting	<ul style="list-style-type: none"> ▪ Wet the surface before, during, and after cutting/drilling using spray bottle with soapy water ▪ Limit number of cores drilled to 20 per day 	Collect wet dust with a paper towel
Removing electric cables	<ul style="list-style-type: none"> ▪ Tape and wet the area that needs to be cut ▪ Minimize cable movement 	Fill waste bag no more than half full

3 Forms

The following forms and systems are required by these requirements:

- [Asbestos Inventory](#). Database containing building-specific information on the presences of asbestos

4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- The asbestos program manager maintains work-site monitoring results for all Class II and III asbestos work not performed by an asbestos abatement subcontractor.

5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 27, “Asbestos”](#)
- [Chapter 17, “Hazardous Waste”](#)

Chapter 27: [Asbestos](#)

Vehicle Brake Work Requirements

Product ID: [260](#) | Revision ID: 2325 | Date published: 3 August 2021 | Date effective: 3 August 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/asbestosReqBrake.pdf>

1 Purpose

The purpose of these requirements is to ensure that worker exposure to asbestos remains below the *permissible exposure limit (PEL)* and to ensure that asbestos waste is disposed of properly. These requirements cover *unclassified* asbestos work in a transportation shop in which a maximum of five pairs of brakes or five clutches are inspected, disassembled, repaired, or assembled per week. These requirements apply to workers who repair cranes and vehicle brakes and their supervisors.

2 Requirements

The worker must

- Be current in asbestos training: ESH Course 150, Asbestos Awareness ([ESH Course 150](#))
- Obtain required asbestos waste bags from [Waste Management](#)
- Wear gloves
- Use the brake and clutch repair kit (soapy water spray bottle/paper towels/asbestos waste container) to wet brake or clutch parts
- Clean dust with wet disposable towels and place disposable towels and used gloves, along with the generated waste, into the hazardous waste bag
- Not use a brush during water spraying
- Not cause any asbestos fibers to become airborne, including not using compressed air or a shop vacuum

3 Forms

The following forms and systems are required by these requirements:

- None

4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- None

5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 27, “Asbestos”](#)
- [Chapter 17, “Hazardous Waste”](#)
 - [Hazardous Waste: Industrial Waste Requirements](#) (SLAC-I-750-0A08S-003)

Other SLAC Documents

- ESH Course 150, Asbestos Awareness ([ESH Course 150](#))
- [Waste Management](#)

Chapter 27: [Asbestos](#)

Asbestos Flooring Requirements

Product ID: [261](#) | Revision ID: 2326 | Date published: 3 August 2021 | Date effective: 3 August 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/asbestosReqFloor.pdf>

1 Purpose

The purpose of these requirements is to ensure *asbestos-containing flooring* (including asphalt and vinyl asbestos tile and sheet vinyl) are properly maintained. They cover the identification of asbestos-containing flooring that may need to be replaced and the prevention of floor wear. They apply to workers, supervisors, and area and building managers in occupied areas with flooring that may contain asbestos.

2 Requirements

2.1 Hazard Identification

Asbestos-containing flooring may contain asbestos. Such flooring must be maintained in good condition because asbestos fibers may become liberated when certain types of hard chair casters grind into the floor tiles during normal use. To determine whether a building is known to contain asbestos flooring, check the [Asbestos Inventory](#).

Note *The wear pattern made by office chair casters is usually a circular area under the chair where tiles appear dull, un-waxed, white, or grainy.*

Air sampling by SLAC industrial hygienists has demonstrated that asbestos dust from worn floor tiles is not entering worker breathing zones during office activities or during flooring replacement. Nevertheless, any apparent wear must be reported to the building manager immediately for assistance in resolving potential problems.

2.2 Managing Flooring Wear

Wear caused by hard chair casters can be mitigated by

- Waxing floors once each year using a wet method adequately seals flooring dust
- Choosing chair casters intended for wood floors; recommended because they are softer than those intended for carpet and decrease wear

Building managers must notify the asbestos program manager whenever flooring damage is observed or reported to identify appropriate controls, which may include

- Protecting the worn area with a hard plastic mat
- Not dry sweeping worn areas (avoids the potential for getting dust in the air)

- Waxing the floor or worn area using a wet method
- Rearranging the furniture to avoid further wear on worn flooring
- Replacing chair casters as appropriate; the asbestos program manager can help determine what type of caster is currently in place
- Replacing flooring worn by chair casters: not recommended unless the flooring is broken or cracked

Any hard casters identified as causing floor damage may not be salvaged for reuse on-site.

All workers must ensure their work area is accessible during the annual wet waxing.

3 Forms

The following forms and systems are required by these requirements:

- [Asbestos Inventory](#). Database containing building-specific information on the presences of asbestos

4 Recordkeeping

The following recordkeeping requirements apply for these requirements:

- The asbestos program manager will maintain records of notifications of damaged asbestos flooring in the [Asbestos Inventory](#).
- Documentation will be retained regarding asbestos flooring removal work done by SLAC employees.
- An annual report will be completed detailing the location and amount asbestos flooring removal and the workers who performed it.

5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 27, “Asbestos”](#)

Chapter 27: [Asbestos](#)

Posting Requirements

Product ID: [267](#) | Revision ID: 2327 | Date published: 3 August 2021 | Date effective: 3 August 2021

URL: <https://www-group.slac.stanford.edu/esh/eshmanual/references/asbestosReqPosting.pdf>

1 Purpose

The purpose of these requirements is to ensure that personnel who perform work on buildings are aware that *asbestos containing material (ACM)* is present. They cover areas where ACM is present and apply to the asbestos program manager and area and building managers.

2 Requirements

The asbestos program manager will ensure that an asbestos warning sign is conspicuously posted on or near the main entrance(s) of any building or facility that contains ACM.

The sign must provide information about the hazards present and actions that must be taken as follows:

MATERIALS IN THIS BUILDING CONTAIN ASBESTOS FIBERS AND SHOULD NOT BE REMOVED, CUT, OR DRILLED.

Detailed information regarding the location and type of ACM should be included.

Building and area managers are responsible for informing the asbestos program manager of any proposed changes that involve ACM in the area.

See an example posting below. To view currently posted signs, see the [Asbestos Inventory](#).



Figure 1 Sample Asbestos Warning Sign

3 Forms

The following forms and systems are required by these requirements:

- [Asbestos Inventory](#). Database containing building-specific information on the presences of asbestos

4 Recordkeeping

The following recordkeeping requirements apply:

- The asbestos program manager ensures that for any building or facility that contains ACM an image of the posted sign is entered in the [Asbestos Inventory](#).

5 References

[SLAC Environment, Safety, and Health Manual](#) (SLAC-I-720-0A29Z-001)

- [Chapter 27, “Asbestos”](#)

851>Cal/OSHA Implementation Plan: Asbestos

This form is for documenting changes to a program and the program’s supporting resources (ESH Manual chapter or similar program description, training courses, databases, and so on) resulting from the adoption of the model Revolutionary Working Group (RWG) contract (see below) and the associated DOE variance from 10 CFR 851, “Worker Safety and Health Program”. The purpose is to ensure consistent, concise descriptions of the resulting changes. The form is to be completed by the program manager and sent to the DOE as a cover sheet with the revised documents. The general process is as follows:

1. Program manager completes form
2. Changes to program resources made and reviewed following normal revision processes
3. DOE sent draft form and revisions
4. Changes to program resources published
5. DOE sent final form and revisions

1 Introduction

The RWG model contract and 10 CFR 851 variance are intended to simplify and improve the implementation of worker safety and health requirements by tailoring the laws, regulations, and standards that apply while achieving a level of protection equivalent to the requirements of 10 CFR 851. This mostly entails replacing federal Occupational Safety and Health Administration (OSHA) regulations (29 CFR 1910 and 1926) with Cal/OSHA regulations (8 CCR) as external requirements to be complied with but may also involve other laws and regulations and either different versions of industry standards than those cited in 10 CFR 851 or entirely different standards. (One purpose of this form is to capture the specific changes in external requirements for each program.) (For more information on this effort, see the variance application in [851>Cal/OSHA](#) resources.)

2 Plan

Field Number	Field Name	Field
1.	Program name	Asbestos
2.	Program manager	Razik, Ramsey
3.	LBNL counterpart	Brown, Rafael (SME list) (LBNL Phonebook)
4.	Program documents	<p><i>The following is a list of existing program documents, to be reviewed by the program manager to determine which will need to be revised to reflect 851>Cal/OSHA changes.</i></p> <ul style="list-style-type: none">▪ ESH Manual Chapter 27: Asbestos▪ Asbestos: Quick Start Summary▪ Asbestos: General Requirements▪ Asbestos: Class II and Class III Asbestos Work Requirements▪ Asbestos: Vehicle Brake Work▪ Asbestos: Office Floor Tiles▪ Asbestos: Posting Requirements
5.	Training courses	<p><i>The following is a list of existing training courses, to be reviewed by the program manager to determine which will need to be revised to reflect 851>Cal/OSHA changes.</i></p>

Field Number	Field Name	Field
		<p><i>Course materials are available for review.</i></p> <ul style="list-style-type: none"> ▪ ESH Course 105, Hazardous Waste Management (ESH Course 105) ▪ ESH Course 105R, Haz Waste Management Refresher (ESH Course 105R) ▪ ESH Course 150, Asbestos Awareness (ESH Course 150) ▪ ESH Course 151, Asbestos Class II and III Refresher Training (ESH Course 151) ▪ ESH Course 152, Asbestos Class II and III Initial Training (ESH Course 152) ▪ ESH Course 153, Limited Class II Asbestos - Abatement of Asbestos Cables (ESH Course 153)
6.	Other program resources	<p><i>The following is a list of existing program resources, to be reviewed by the program manager to determine which will need to be revised to reflect 851>Cal/OSHA changes.</i></p> <ul style="list-style-type: none"> ▪ Asbestos Inventory ▪ Industrial Hygiene Group
7.	Current external requirements	<p><i>The following is a list of current external requirements for this program, as identified in the program documents above.</i></p> <ul style="list-style-type: none"> ▪ Title 29, Code of Federal Regulations, “Labor”, Subtitle B, “Regulations Relating to Labor (Continued)”, Chapter 17, “Occupational Safety and Health Administration, Department of Labor”, Part 1910, “Occupational Safety and Health Standards”, Subpart I, “Personal Protective Equipment”, Section 1910.134, “Respiratory Protection” (29 CFR 1910.134) ▪ Title 29, Code of Federal Regulations, “Labor”, Subtitle B, “Regulations Relating to Labor (Continued)”, Chapter 17, “Occupational Safety and Health Administration, Department of Labor”, Part 1910, “Occupational Safety and Health Standards”, Subpart Z, “Toxic and Hazardous Substances”, Section 1001, “Asbestos” (29 CFR 1910.1001) ▪ Title 29, Code of Federal Regulations, “Labor”, Subtitle B, “Regulations Relating to Labor (Continued)”, Chapter 17, “Occupational Safety and Health Administration, Department of Labor”, Part 1926, “Safety and Health Regulations for Construction”, Subpart Z, “Toxic and Hazardous Substances”, Section 1101, “Asbestos” (29 CFR 1926.1101) ▪ Title 40, Code of Federal Regulations, “Protection of Environment”, Chapter 1, “Environmental Protection Agency (Continued)”, Subchapter C, “Air Programs (Continued)”, Part 61, “National Emission Standards for Hazardous Air Pollutants” (40 CFR 61) ▪ Title 40, Code of Federal Regulations, “Protection of Environment”, Chapter 1, “Environmental Protection Agency (Continued)”, Subchapter R, “Toxic Substances Control Act”, Part 763, “Asbestos” (40 CFR 763) ▪ Bay Area Air Quality Management District (BAAQMD), Regulation 11, Hazardous Pollutants, Rule 2, “Asbestos Demolition, Removal and Manufacturing” (BAAQMD 11.2) ▪ Title 8, California Code of Regulations, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 4, “Construction Safety Orders”, Article 4, “Dusts, Fumes, Mists, Vapors, and Gases”, Section 1529, “Asbestos” (8 CCR 1529) ▪ Title 8, California Code of Regulations, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 4, “Construction Safety Orders”, Article 4, “Dusts, Fumes, Mists, Vapors, and Gases”, Section 1531, “Respiratory Protective Equipment” (8 CCR 1531) ▪ Title 8, California Code of Regulations, “Industrial Relations”, Division 1, “Department of Industrial Relations”, Chapter 4, “Division of Industrial Safety”, Subchapter 7, “General Industry Safety Orders”, Group 16, “Control of Hazardous Substances”, Article 110, “Regulated Carcinogens”, Section 5208, “Asbestos” (8 CCR 5208) <p><i>The following is a list of current external reference/guidance documents.</i></p>

Field Number	Field Name	Field
		<ul style="list-style-type: none"> None
8.	Proposed external requirements	<p>List all the external requirements that will apply to this program. To determine, start by looking up existing external requirements in 851>Cal/OSHA resources (variance, gap analysis, and contract) and finding replacements (for example a specific section in 29 CFR 1910 to a specific section in 8 CCR or a current version of an industry standard). Where Cal/OSHA requirements are less stringent than those of 10 CFR 851, check with Jeremy Sawyer on which to use. Enter “no changes” if none.</p> <ul style="list-style-type: none"> Deleted references to 29 CFR 1910.1001 and 1926.1101, the general industry and construction asbestos standards Made 8 CCR 1529 and 8 CCR 5208, the California construction and general industry asbestos standards, apply to SLAC personnel, not just asbestos abatement contractors Deleted regulations and standards covered under other programs
9.	Proposed substantive changes	<p>Describe (list) the substantive changes to be made in the program, based on the new external requirements. Enter “no changes” if none.</p> <ul style="list-style-type: none"> No changes
10.	Additional proposed substantive changes	<p>Describe (list) the substantive changes to be made in the program, in addition to those based on the new external requirements. For example, those due to stakeholder input, other reviews and audits, operating experience. Enter “no changes” if none.</p> <ul style="list-style-type: none"> Added recordkeeping requirements
11.	Affected program documents	<p>List program documents affected by the changes above. Enter “no changes” if none.</p> <ul style="list-style-type: none"> ESH Manual Chapter 27: Asbestos Asbestos: General Requirements Asbestos: Asbestos Flooring Requirements
12.	Affected training courses	<p>List training courses affected by the changes above. Enter “no changes” if none.</p> <ul style="list-style-type: none"> ESH Course 150, Asbestos Awareness (ESH Course 150) ESH Course 151, Asbestos Class II and III Refresher Training (ESH Course 151) ESH Course 152, Asbestos Class II and III Initial Training (ESH Course 152) ESH Course 153, Limited Class II Asbestos - Abatement of Asbestos Cables (ESH Course 153)
13.	Other affected program resources	<p>List other program resources affected by the changes above. Enter “no changes” if none.</p> <ul style="list-style-type: none"> No changes
14.	Comments/questions/issues	<p>Add any comments or questions regarding applicable requirements or changes. [Add text]</p>
15.	Status	<input checked="" type="checkbox"/> Initial draft (proposed changes) <input checked="" type="checkbox"/> Draft (for DOE review) <input checked="" type="checkbox"/> Final (published changes)
16.	Date completed	9/25/2020 1/12/2021 8/3/2021