

AEC Policy Regarding Asbestos Related Construction Work

The Association of Environmental Contractors (AEC) wants to ensure that construction work that disturbs asbestos is conducted in a legal and safe manner. This document is designed to define, in brief, the roles and responsibilities of building owners, environmental consultants, general/prime contractors, environmental contractors and architects regarding the disturbance of asbestos containing materials. Working together, we can assure that the disturbance of asbestos during construction activities does not endanger workers or their families, building occupants, or the public in general.

Asbestos Regulations are minimum standards and specifications will exceed minimum standards in areas the owner/consultant wish to increase safety or reduce liability.

There are three main regulations that govern inspections for asbestos, management of asbestos in place and abatement¹ of asbestos hazards:

The Federal EPA's AHERA² (most aspects currently enforced in California by the Federal EPA)

The Federal EPA's NESHAP³ for asbestos (most aspects currently enforced in California by regional APCDs/AQMDs⁴ with support from the Federal EPA)

Cal/OSHA's Asbestos in Construction Standard⁵ (enforced by Cal/OSHA, except on Federal lands located within California)

Note: There are a multitude of additional regulations at the Federal, State, and Local levels that apply to asbestos abatement work in California, many of these can be found in Appendix A attached to this document.

The **AHERA regulation** mostly applies to K-12 School Districts.⁶ Some aspects (training) of this rule have been extended to most all asbestos work⁷ in most any building⁸ by ASHARA.⁹ Some aspects of this rule apply outside of K-12 Schools due to reference within other asbestos regulations (For instance Cal/OSHA references sampling protocols per the AHERA regulation for various classes of materials). Compliance with much, but not all, of this rule can be avoided¹⁰ under certain circumstances if the School or Building was constructed after October 1988.

The **NESHAP regulation** applies to all buildings and facilities, regardless of age or type, except for residential properties of four or fewer units (some local authorities apply this regulation to all residential properties,¹¹ including single family homes). This rule contains requirements for inspections, notification, and training when 160 square feet or 260 lineal feet of regulated asbestos containing waste (RACM)¹² will be removed during renovation and for every demolition¹³ project. This regulation also applies to, and has restrictions against, the creation of visible dust clouds or the track out of dirt and/or soil regardless of asbestos content of the dust, dirt or soil.

The **Cal/OSHA Asbestos in Construction** regulation has notification and work practice requirements for both contractors and building owners for assuring asbestos is handled correctly. Cal/OSHA also has General Industry and Shipyards Standards.¹⁴

When building materials are disturbed, all three of the above regulations have applicable sections that must be followed. It is not a question of following the "most stringent" regulation, but rather a need to follow the requirements of all three regulations.

There is a lot of confusion in the construction industry concerning materials that may contain asbestos.¹⁵ A partial ban of asbestos containing materials, instituted in the 1970s, is often mistakenly thought to prohibit the manufacture and installation of all asbestos containing products. Even some materials that were part of the asbestos ban, such a drywall joint compound, are still found to contain asbestos in buildings constructed recently.¹⁶ There is no such thing as a building "too new" to contain asbestos. When the regulations above are considered as a group, nearly all constructions materials must be proven to be asbestos free by bulk sampling¹⁷ or handled as though they contain asbestos.

A time and cost effective asbestos project starts with an accurate and thorough inspection. However, to assure asbestos-containing materials (ACMs) are handled both legally and safely, all parties involved in a project must work together. Asbestos is only one of several potential hazardous materials¹⁸ the project team must be concerned with.

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Responsibilities of Building Owners Regarding Asbestos-Related Construction Work

- 1.1 Building Owners, per Cal/OSHA regulation,¹⁹ are required to have an asbestos survey²⁰ of their buildings no matter the type or age of the building. Building renovation requires an asbestos survey for all materials being impacted by the renovation.²¹
- 1.2 Building surveys for asbestos can be conducted in-house by building owner employees if these employees are EPA AHERA accredited Building Inspectors.²² If an outside consultant is hired to collect asbestos samples, they must be a Certified Asbestos Consultant (CAC) or Certified Site Surveillance Technician (CSST).²³
- 1.3 Building owners are responsible/liable for how asbestos, ACM, presumed asbestos-containing materials (PACM), and assumed asbestos-containing materials²⁴ are handled²⁵ at and within their buildings. This includes tenants, maintenance and custodial workers, contractors and others. This regulatory liability cannot be transferred²⁶ to another party.
- 1.4 Building owners must assure asbestos remaining at or within their buildings is properly managed and maintained in a non-hazardous fashion. This includes notifications to various parties²⁷ and labeling requirements²⁸ within Cal/OSHA regulations.
- 1.5 Building owners must maintain written documentation on the identification, location, and quantity of any ACM or PACM for the duration of building ownership and transfer the records to successive owners.
- 1.6 Building owners can train in-house workers to disturb/remove ACM within their buildings without having to register as an abatement contractor. However, the amount of ACM these workers can legally disturb/remove is minimal (less than 100 sq ft).²⁹
- 1.7 Building owners that conduct work using in-house employees must register with Cal/OSHA as a carcinogen user.
- 1.8 If work disturbing asbestos-containing construction material (ACCM)³⁰ involves more than 100 square feet of material, it must be conducted by an employer/contractor that is registered with Cal/OSHA as an asbestos abatement contractor.
- 1.9 Building owners are required to avoid conflict of interests³¹ when hiring abatement contractors and consultants.
- 1.10 Building owners are not required by regulations to notify contractors of materials that have been sampled and proven to be asbestos free,³² but not doing so requires contractors to assume these materials are ACM and handle them as such.
- 1.11 Building Owners must notify the following or their authorized representatives of the location and quantity of all ACM and PACM: Prospective employers applying or bidding for work and all other employers with employees who will work in or adjacent to areas with such material; the building owner's employees working in or adjacent to these areas; and Tenants who will occupy areas containing such material.
- 1.12 If a School District, owners are required by the U.S. EPA to have a management plan and surveys of where asbestos is known or presumed to be present. Contact the U.S. EPA Region 9 Asbestos Regional Coordinator for additional information.
- 1.13 Building owners conducting construction or demolition work that impacts ACM should contract construction firms that are knowledgeable enough to conduct the work in a legal fashion and experienced/capable enough to conduct the work safely. This includes assuring contractors have proper licenses, equipment, insurance, and crews that are properly accredited and trained.
- 1.14 When asbestos work is conducted, building owners and contractors alike, must concern themselves not only with asbestos, but also with other potential hazardous materials that may be disturbed on the project. These other common hazardous materials include lead, silica, PCBs, mercury, mold, and others.
- 1.15 Building owners must notify tenants and employees of work disturbing ACM that will occur at their facility prior to the project starting. Building owners must also assure that contractors working on ACM or PACM within or on their building have properly notified various regulatory agencies including Cal/OSHA and the local NESHAP enforcement agency³³ prior to the project starting.
- 1.16 To protect from both civil and regulatory liability,³⁴ building owners should verify that asbestos related work is conducted in both a legal and safe fashion. This verification of asbestos safe work practices (including the use of PPE by the asbestos workers), personal air monitoring, and engineering controls³⁵ must be documented and retained for a minimum of 30 years.³⁶
- 1.17 While building owners in California, other than of K-12 School Districts, are not required to conduct clearance air sampling at the completion of asbestos removal, clearance air samples are often collected in non-School buildings to reduce liability and, on occasion, comply with insurance requirements.³⁷
- 1.18 Building owners can monitor/verify/document the work practices and engineering controls, plus conduct clearance air monitoring with their own personnel. However, most building owners do not have personnel with the proper training and experience, as well as the time in their workday, to conduct these documentation and sampling activities. Building owners can hire properly trained and certified asbestos consultants to conduct these activities. If more than 100 square feet of ACM is disturbed on the project, the consultant must be a CAC or CSST.

- 2.1 Environmental consultants (consultants)³⁸ are hired to inform clients about common environmental hazards³⁹ that may be created during construction. This includes informing clients about regulatory and practical requirements for identifying existing and potential asbestos hazards,⁴⁰ both for construction issues and in-place management of asbestos within their buildings. Consultants should also note that other potentially hazardous materials, such as lead, silica, mold, PCBs, mercury, etc. exist, or may exist, within their buildings and what regulations would require concerning these materials.
- 2.2 Consultants should educate their clients in the difference between minimum legal requirements and recommended procedures to decrease owner's risks.⁴¹ Consultants should assure their clients (building owners, project team⁴² or contractors) are aware they are responsible for the activities of the contractors on their projects when asbestos (and other hazardous materials are disturbed).
- 2.3 Consultants should help clients to understand which hazardous material regulations apply to their project.
- 2.4 When inspecting for construction purposes, consultants should conduct as thorough a survey as possible.⁴³
- 2.5 Consultants should conduct construction related asbestos inspections that can easily be compared to plans and specifications issued by architects, construction managers, and/or others.
- 2.6 Regardless of building construction date or material installation date, consultants must sample all materials suspected to contain asbestos,⁴⁴ or list un-sampled, or under sampled,⁴⁵ materials as assumed to contain asbestos.
- 2.7 Consultants write specifications for the disturbance, removal and repair of asbestos-containing materials. These contract documents specify the classes of ACM materials and requirements for asbestos remediation.
- 2.8 Consultants assist the project team with notification and specification language for non-environmental contractors concerning the hazardous and potentially hazardous materials existing on the project.
- 2.9 Consultants assist with creating the bid specifications, conducting the bid walk, selection of the environmental contractor and assurance that the environmental contractor has the proper experience, certifications/registrations, licenses and insurance to conduct the project.
- 2.10 Consultant's specifications need to be clear enough to assure bids received can be compared to each other properly. However, specifications should remain flexible enough to capture value engineering offered by environmental contractors.⁴⁶
- 2.11 The consultants assist in pre-construction communication and meetings.
- 2.12 Consultant monitoring and documentation of the project starts with project set-up,⁴⁷ continues through project activities including disturbance, removal and repair of asbestos materials, clearances activities⁴⁸ and assures all teardown activities⁴⁹ and paperwork requirements⁵⁰ are completed.
- 2.13 Consultant specifications require compliance with the project requirements and applicable regulations. Consultants should be careful not to give direction to the workers conducting the asbestos work.
- 2.14 Consultants assure that Department of Toxic Substance Control Title 22⁵¹ waste regulations are followed by contractors and waste haulers. Consultants should facilitate the use, and assure the proper handling of, hazardous and non-hazardous waste manifests.
- 2.15 Consultants notify, or assure notification is conducted by, building owners, project team members, and contractors of asbestos containing materials removed and remaining (and other potentially hazardous construction materials).⁵²
- 2.16 Consultant's educate the project team of hazardous materials training requirements for workers in order to work around, or with, hazardous materials remaining within the project area.⁵³
- 2.17 Consultants design regulatory compliant actions, that protect the health of workers and post project occupants, for hazardous construction material issues that arise during a project.

Responsibilities of General/Prime/Sub Contractors Regarding Asbestos-Related Construction Work

- 3.1 General/Prime Contractors can be held responsible by Cal/OSHA for the actions of their subcontractors.
- 3.2 From Cal/OSHA 1529 (d) Multi-employer worksites:
 - 3.2.1 *On Multi-employer worksites, an employer performing work requiring the establishment of a regulated area⁵⁴ shall inform other employers on the site of the nature of the employer's work with asbestos and/or PACM, of the existence of and requirements pertaining to regulated areas. . .*
 - 3.2.2 *Asbestos hazards at a multi-employer work site shall be abated by the contractor who created or controls the source of asbestos contamination. . .*
 - 3.2.3 *In addition, all employers of employees exposed to asbestos hazards shall comply with applicable protective provisions to protect their employees. For example, if employees working immediately adjacent to a Class I asbestos job are exposed to asbestos due to the inadequate containment of such job, their employer shall either remove the employees from the area until the enclosure breach is repaired; or perform an initial exposure assessment pursuant to subsection (f) of this section.*
 - 3.2.4 *All employers of employees working adjacent to regulated areas established by another employer on a multi-employer work-site, shall take steps on a daily basis to ascertain the integrity of the enclosure and/or the effectiveness of the control method relied on by the primary asbestos contractor to assure that asbestos fibers do not migrate to such adjacent areas.*
 - 3.2.5 *All general contractors on a construction project which includes work covered by this standard shall be deemed to exercise general supervisory authority over the work covered by this standard, even though the general contractor is not qualified to serve as the asbestos "competent person"⁵⁵. . . As supervisor of the entire project, the general contractor shall ascertain whether the asbestos contractor is in compliance with this standard, and shall require such contractor to come into compliance with this standard when necessary.*
- 3.3 Multi-Employer Worksites:
 - 3.3.1 When a violation occurs on a multi-employer project, Cal/OSHA considers general/prime/sub-contractors to be one of the following: Exposing Employer,⁵⁶ Creating Employer,⁵⁷ Controlling Employer,⁵⁸ Correcting Employer⁵⁹ – each of these levels of employer carries with it specific liability on projects. .
- 3.4 General/Prime/Sub contractors should assure hazardous materials, such as asbestos, lead, PCBs, etc., are identified prior to the start of work, preferably prior to bidding/proposing to do the work, but definitely before the construction contracts are finalized.
- 3.5 Regardless of age of the building or materials installation date, all materials for which the General/Prime/Sub contractor has not been given evidence showing the materials to be asbestos free by bulk sampling, the contractor must assume they contain asbestos and handle them as such. (This is the same for lead and other potentially hazardous materials). It is a conflict of interest for a General/Prime/Sub contractor to collect samples⁶⁰ for asbestos analysis on the same project for which they are providing services. Anyone collecting a sample for asbestos analysis must be an AHERA accredited Building Inspector and, in most cases a CAC or CSST.
- 3.6 General/Prime contractors should assure all workers who work in areas where ACM,⁶¹ ACCM,⁶² PACM,⁶³ NOA⁶⁴ exists, or assumed ACM exist have at least asbestos awareness training.⁶⁵
- 3.7 In areas where workers will be conducting Cal/OSHA Class I, II, III, or IV asbestos work, regardless as to whether they are an asbestos abatement contractor, General/Prime contractors should assure all workers are properly trained.
- 3.8 General/Prime contractors should assure asbestos work being conducted on a project is conducted in compliance with all applicable asbestos regulations.
- 3.9 General/Prime/Sub contractors should assure all tenants, occupants and visitors to a project are properly notified of the asbestos work and prevented from entering areas of asbestos disturbance without the proper training and personal protective equipment.
- 3.10 General/Prime/Sub contractors whose employees that may be exposed to asbestos on a project must conduct personal air sampling assessments on such employees or remove those employees from the area of potential exposure.
- 3.11 If less than 100 square feet of asbestos-containing construction materials are disturbed, and therefore the project is not subject to the asbestos registration rules, file a Report of Use⁶⁶ with the Chief of DOSH (Cal/OSHA).
- 3.12 If General/Prime/Sub contractors discover ACM or PACM they must inform the building owner and other employers of employees working at the work site within 24 hours.
- 3.13 In cases where materials reasonably believe to be asbestos have not been rendered harmless, General/Prime/Sub contractors must stop work in affected areas. See section 25914.2(c) of the California Health and Safety Code for the exact requirements.

- 4.1 Environmental contractors are required to be knowledgeable concerning applicable regulations and state-of-the-art work practices. This makes them the most responsible for assuring asbestos work is conducted both legally and safely.
- 4.2 Environmental contractors are required to assume all materials are hazardous or follow a third party environmental survey and specification that identifies hazardous materials such as asbestos, lead, mold, etc.
- 4.3 Environmental contractors must comply with the Cal/OSHA Multi-Employer Worksite rules on all construction projects. This includes notifying General/Prime/Sub contractors when other sub-contractors are improperly disturbing asbestos, or other hazardous materials.⁶⁷
- 4.4 Environmental contractor should assure all personnel under their employment are properly trained and accredited to conduct asbestos removal. If asbestos removal disturbs lead, silica, PCBs or other hazardous materials, workers should be trained and, if necessary, accredited or certified for those materials as well.
- 4.5 Send notices of temporary worksites, where asbestos will be disturbed in any amount, to the nearest Cal/OSHA District Office 24 hours prior to the start of work.
- 4.6 Hold a pre-job safety meeting to discuss safety program and safe work practices with employees, their representatives, and the building owner or their representative.
- 4.7 Post a warning sign readable at 20 feet out from regulated area.
- 4.8 Before the commencement of the work, provide a copy of the registration to the prime contractor and other employers at the site. Also, post a copy beside the jobsite Cal/OSHA poster.
- 4.9 Environmental contractors must create and submit to the building owner a list of all asbestos containing materials in their project area(s) which were left in place at the conclusion of their work.

- 5.1 The architect/construction manager (architect/cm) must consider and incorporate into their work, compliance with applicable governmental regulations.⁶⁸ This includes the need to comply with Federal and California regulations regarding asbestos since they will affect the architect's contractual responsibilities to the owner. The presence of asbestos will affect project design, the cost estimating, and the architect's/cm's advice to the owner regarding the type of contractor that should be allowed to bid on the work.
- 5.2 The failure of an architect/cm to consider asbestos, especially in situations where Federal and California law specify asbestos must be presumed present, will likely indicate that the architect/cm is not demonstrating professional care and skill in advising the owner. Therefore, the architect/cm may be held at least partly responsible for delays and costs that could have been anticipated had asbestos issues been initially discussed with the owner.⁶⁹
- 5.3 As with various engineering disciplines, the architect/cm cannot be expected to be an expert in everything that occurs on a project. An architect's/cm's best means of control for engineering issues is to have professional engineers on their project team. A competent and qualified environmental consultant is no less important.
- 5.4 There are several ways for an architects/cm to assure hazardous materials are handled properly. These can include:
 - 5.4.1 With the environmental consultant as part of the project management team (project team).
 - 5.4.2 With the environmental consultant hired by the building owner and the environmental contractor a sub to a general contractor.
 - 5.4.3 With an owner addressing asbestos by use of an environmental consultant providing information and specifications and an environmental contractor providing hazardous materials construction activities to the project separate from the project team
- 5.5 As the penultimate contract administrative authority on a construction project, the architect/cm is ultimately responsible for assuring all activities on a project are conducted both legally and safely. If architect/cm firms choose to have the environmental consultant as a full member of the of the project team, the architect's/cm's responsibilities are similar to those of a general contractor for multi-employer worksites. This approach gives the architect/cm the ability to best protect both their risk/liability and the risk/liability of their client, the building owner.
- 5.6 The entire project team is responsible for assuring hazardous materials are known and addressed properly on construction projects. On a project where the architect has not addressed the hazardous materials, they may still be held responsible for the mishandling of these materials by contractors following the plans and specifications issued by the architect. If the environmental consultant is working directly for the owner (5.4.2 and 5.4.3 above), the architect/cm (and the rest of the project team) should be knowledgeable enough on asbestos issues to understand the reports they receive. This includes:
 - 5.6.1 What to look for in an asbestos report to assure it is thorough and complete.⁷⁰
 - 5.6.2 What licenses, registrations and level training abatement and non-abatement contractors (and their workers) are required to have. This is especially important on a project where asbestos-containing materials are not removed in their entirety.⁷¹
 - 5.6.3 What regulatorily required notifications⁷² are required to be made by the abatement contractor to conduct and complete the project legally.
 - 5.6.4 What activities are legally conducted by non-abatement contractors and what must be conducted by an asbestos-abatement contractor.
- 5.7 No renovation or demolition project should be conducted without a hazardous material consultant involved early in the design process. Having a competent environmental consultant on board as early as the conceptual design phase can help the team avoid costly pitfalls⁷³ by providing cost-efficient options that can help a project's schedule and budget. This includes evaluating and selection of an environmental contractor for the project, whether the environmental contractor is working directly for the owner, as a prime contractor or as a sub to the general contractor.

Appendix A - Asbestos Regulations (A partial listing...)

FEDERAL EPA ASBESTOS LAWS

The Asbestos Hazard Emergency Response Act (AHERA) (Toxic Substances Control Act (TSCA) Title II)

This law required EPA to promulgate regulations (e.g., the Asbestos-Containing Materials in Schools Rule) requiring local educational agencies to inspect their school buildings for asbestos-containing building material, prepare asbestos management plans and perform asbestos response actions to prevent or reduce asbestos hazards. AHERA also tasked EPA with developing a model plan for states for accrediting persons conducting asbestos inspection and corrective-action activities at schools. The Toxic Substances Control Act defines asbestos as the asbestiform varieties of: chrysotile (serpentine); crocidolite (riebeckite); amosite (cummingtonite/grunerite); anthophyllite; tremolite; and actinolite.

[TSCA Subchapter II: Asbestos Hazard Emergency Response \(15 U.S.C. § 2641-2656\)](#)

Asbestos Information Act (Public Law 100-577)

This law helped to provide transparency and identify the companies making certain types of asbestos-containing products by requiring manufacturers to report production to the EPA.

[15 U.S.C. § 2607\(f\)](#)

Asbestos School Hazard Abatement Reauthorization Act (ASHARA)

This law extended funding for the asbestos abatement loan and grant program for schools. ASHARA also directed EPA to increase the number of training hours required for the training disciplines under the Asbestos Model Accreditation Plan (MAP) and to expand the accreditation requirements to cover asbestos abatement projects in all public and commercial buildings in addition to schools.

[Asbestos School Hazard Abatement Reauthorization Act of 1990](#)

[Asbestos Model Accreditation Plan](#)

[February 3, 1994 Federal Register Notice: Asbestos Model Accreditation Plan](#)

Clean Air Act (CAA) (42 USC § 7401 et seq.)

This law defines the EPA's responsibilities for protecting and improving the nation's air quality and the stratospheric ozone layer and includes provisions for the EPA to set national emission standards for hazardous air pollutants, including asbestos.

[Section 112- National Emission Standards for Hazardous Air Pollutants](#)

Safe Drinking Water Act (SDWA)

The Safe Drinking Water Act (SDWA) is the federal law that helps ensure the quality of Americans' drinking water. Under the SDWA, EPA sets standards for drinking water quality and oversees the states, localities, and water suppliers who implement those standards.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)

This law, also known as Superfund, was enacted to address abandoned hazardous waste sites in the U.S. The law has subsequently been amended, by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and the Small Business Liability Relief and Brownfields Revitalization Act of 2002. CERCLA authority may be appropriate to respond to the release or potential release of asbestos into the environment.

FEDERAL EPA ASBESTOS REGULATIONS

Asbestos-Containing Materials in Schools Rule

Pursuant to the Asbestos Hazard Emergency Response Act (AHERA), the Asbestos-Containing Materials in Schools rule requires local education agencies to inspect their school buildings for asbestos-containing building material, prepare asbestos management plans and perform asbestos response actions to prevent or reduce asbestos hazards. Public school districts and non-profit private schools, including charter schools and schools affiliated with religious institutions (collectively called local education agencies) are subject to the rule's requirements.

[Asbestos-Containing Materials in Schools Rule \(40 CFR Part 763, Subpart E\)](#)

[Interim Transmission Electron Microscopy \(TEM\) Analytical Methods \(Appendix A to Subpart E of 40 CFR Part 763\)](#)

[Asbestos Model Accreditation Plan \(Appendix C to Subpart E of 40 CFR Part 763\)](#)

[Transport and Disposal of Asbestos Waste \(Appendix D to Subpart E of 40 CFR Part 763\)](#)

[Interim Method of the Determination of Asbestos in Bulk Insulation Samples \(Appendix E to Subpart E of 40 CFR Part 763\)](#)

EPA Asbestos Worker Protection Rule

Through the authority of Section 6 of the Toxic Substances Control Act (TSCA) the EPA extended worker protection requirements to state and local government employees involved in asbestos work who were not previously covered by the Occupational Safety and Health Administration's (OSHA) asbestos regulations.

[40 CFR Part 763, Subpart G – Asbestos Worker Protection](#)

Asbestos Ban and Phaseout Rule (Remanded)

On July 12, 1989, the EPA issued a final rule banning most asbestos-containing products. In 1991, this regulation was overturned by the Fifth Circuit Court of Appeals. However, as a result of the Court's decision, only a few asbestos-containing products remain banned.

[See Asbestos Ban and Phase-out Federal Register notices.](#)

[40 CFR Part 763, Subpart I -- Prohibition of the Manufacture, Importation, Processing and Distribution in Commerce of Certain Asbestos-Containing Products; Labeling Requirements](#)

Asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP)

The asbestos NESHAP regulations specify work practices for asbestos to be followed during demolitions and renovations of all structures, installations, and buildings (excluding residential buildings that have four or fewer dwelling units). The regulations require the owner of the building or the operator to notify the appropriate state agency before any demolition, or before any renovations of buildings that could contain a certain threshold amount of asbestos or asbestos-containing material. In addition, particular manufacturing and fabricating operations either cannot emit visible emissions into the outside air or must follow air cleaning procedures, as well as follow certain requirements when removing asbestos-containing waste.

[40 CFR Part 61, Subpart M \(Complete Rule\)](#)

[40 CFR §61.145—Standard for demolition and renovation](#)

[40 CFR §61.150—Standard for waste disposal for manufacturing, fabricating, demolition, renovation, and spraying operations](#)

CERCLA Hazardous Substances and Reportable Quantities

Asbestos is designated as a hazardous substance with a reportable quantity in the Superfund regulations.

[40 CFR Part 302.4 - Designation of Hazardous Substances and Reportable Quantities](#)

Federal Occupational Safety and Health Administration (OSHA)

OSHA oversees the working conditions for U.S. workers by implementing and managing occupational safety and health standards. The following regulations pertain to handling asbestos in the workplace.

[Asbestos General Standard—Specification of permissible exposure limits, engineering controls, worker training, labeling, respiratory protection, and disposal of asbestos waste](#)

[29 CFR 1910.1001](#)

[Asbestos Construction Standard—Covers construction work involving asbestos, including work practices during demolition and renovation, worker training, disposal of asbestos waste, and specification of permissible exposure limits](#)

[29 CFR 1926.1101](#)

Consumer Product Safety Commission (CPSC)

The CPSC protects consumers and families from consumer products that pose a fire, electrical, chemical, or mechanical hazard or can injure children. Below are the following CPSC bans or restrictions on asbestos-containing products:

[Emberizing Materials](#)

[16 CFR Part 1305](#)

[Patching Compounds](#)

[16 CFR Part 1304](#)

[Asbestos Containing Garments for General Use](#)

[16 CFR § 1500.17\(a\)\(7\)](#)

[Mine Safety and Health Administration \(MSHA\)](#)

MSHA is responsible for overseeing the safety and health of miners in the U.S. The following MSHA regulations apply to asbestos in mines:

[Surface Mines: exposure limits, engineering controls, and respiratory protection measures for workers in surface mines](#)

[30 CFR part 56, subpart D](#)

[Underground Mines: exposure limits, engineering controls, and respiratory protection measures for workers in underground mines](#)

[30 CFR part 57, subpart D](#)

[STATE OF CALIFORNIA ASBESTOS LAWS](#)

Asbestos-in-Construction-Title 8 of the California Code of Regulations (8 CCR) 1529 at www.dir.ca.gov/Title8/sb4a4.html.

See 8 CCR 5208 for general industry and

See 8 CCR 8358 for shipyard rules

Go to www.dir.ca.gov/samples/search/query.htm

Cal/OSHA asbestos contractor registration-

Go to <https://www.dir.ca.gov/dosh/acru/ACRUregistration.htm>.

Cal/OSHA asbestos consultant certification- See 8 CCR 341.15, www.dir.ca.gov/title8/ch3_2sb2a2_6.html

1529(q) and the Business and Professions Code Sections 7180-7189.7 at leginfo.legislature.ca.gov

Cal/OSHA asbestos training provider certification –

See 8 CCR 341.16 at www.dir.ca.gov/title8/ch3_2sb2a2_7.html

California Code, Health and Safety Code - HSC § 25915

Asbestos Notification Act - known as the “Connelly Act” - <http://codes.findlaw.com/ca/health-and-safety-code/hsc-sect-25915.htm>

Various APCD/AQMD, Health Departments and other regional or local agencies have specific regulations that apply within the areas for which they have jurisdiction. Building Owners, Contractors and Consultants should all make themselves aware of these rules and regulations prior to conducting work that disturbs asbestos.

[Additional Asbestos Regulations by Agency](#)

[OCCUAPTIONAL SAFETY AND HEALTH ADMINISTRATION \(Federal OSHA\)](#)

Regulates occupational exposure to asbestos.

29 CFR Part 1910.1001 Asbestos Standard (General Industry)

29 CFR Part 1915.1001 Asbestos Standard (Shipyard Industry)

29 CFR Part 1910.134 Respiratory Protection Standard

[Cal/OSHA – California Department of Occupational Safety and Health DOSH](#)

Regulates occupational exposure to asbestos for employees in California.

8 CCR Article 110, Section 5208 Asbestos Standard (General Industry)

Labor Code 9000 et. Seq. (Carcinogen user registration)

Labor Code 6501.5 et. Seq. (8 CCR Article 2.5 Section 341.6 et. Seq.)

(Employer registration when disturb more than 100 feet ACCM – No exceptions)

8 CCR Article 2.5 Section 341.9 and 8 CCR Article 4, Section 1529

(Notification required prior to disturbing ACM)

8 CCR Article 2.6 Section 341.15 (Consultant/Site Surveillance Technician Certification)

8 CCR Section 3203 and Section 1509 (Injury and Illness Prevention Program)

[ENVIRONMENTAL PROTECTION AGENCY \(EPA\)](#)

Regulates environmental exposure to asbestos

40 CFR Part 763 “Friable Asbestos-Containing Materials in Schools – 1982” (Initial asbestos regulation regarding identification and notification issues in schools)

PL 98-377 “Asbestos School Hazard Abatement Act – 1984” (Provided funding for asbestos work in schools Reauthorization triggered Revised Model Accreditation Plan.

40 CFR Part 763 Asbestos “Revised Model Accreditation Plan” – 1984 (Revised MAP)

(Extended AHERA training accreditation requirements to public and commercial buildings)

[California Environmental Protection Agency](#)

[\(Cal/EPA - Division of Toxic Substances Control – DTSC\)](#)

Regulates asbestos waste handling procedures in California.

22 CCR Section 66261.24 et. seq. (Defines ACM as hazardous waste when >1% asbestos and friable. Requires EPA manifest, trained driver/registered vehicle, approved landfill, etc.)

California Health and Safety Code Section 25163(c) (Some exemptions for small generators regarding manifest and transport. Containers, labeling, etc. do not change).

22 CCR Section 66268.7(a) (4) (Requires “notice and certification” be provided landfill).

22 CCR Section 66268.114 (Meet “treatment standard” of packaging wet material in leak tight container).

[California State Licensing \(CSLB\)](#)

Regulates asbestos contractors in California.

Business and Professions Code Section 7058.5 (Licensed contractors disturbing > 100 feet of ACCM must have asbestos certification and provide that number in advertising).

[Other California Regulations Regarding Asbestos](#)

Health and Safety Code Section 25915 et. sq. “Asbestos Notification Act” (Significant notification requirements for owner of pre-1978 non-residential buildings.)

Health and safety Code Section 25914.1-3 “Hazardous Substance Removal Contracts” (Separate contracts required if hazardous materials not disclosed in initial contract.)

Health and Safety Code Section 25359.7 “Real Estate Disclose” (Disclose presence of known ACM prior to sale)

California Labor Code Section 6501.9 (Building owners must make good faith effort to determine if ACCM is present prior to engaging in or contracting for work in pre-1978 buildings.)

California Safe Drinking Water and Toxic Enforcement Act of 1986 “Proposition 65” (Requires notification via Prop. 65 sign and filtration of waste water.)

Health and Safety Code Section 19827.5 (Building officials shall not issue a demolition permit until the applicant has demonstrated compliance with NESHAP notification requirements.)

AEC Policy Regarding Asbestos Related Construction Work - End Notes

¹ **Abatement** can include partial or complete removal of materials. It can also include repair, enclosure, encapsulation, or other techniques that removes the hazard of asbestos fiber exposure from the immediate environment.

² The **Federal Environmental Protection Agency's AHERA Regulation** (40 CFR 763) applies mostly to K-12 not for profit School Districts. Training required by the AHERA regulation and sampling protocols for bulk materials, to prove they do not contain asbestos, have been extended to all buildings by other regulations at this point.

³ The **Federal Environmental Protection Agency's NESHAP Regulation** (40 CFR 63) applies to any building, regardless of age, except residential properties of four units or less. However, this regulation is often enforced in the four unit or less residential facilities by local or regions ordinance. For instance, Bay Area Air Quality Management District applies the EPA NESHAP regulation to all buildings, even single-family homes.

⁴ **APCD** = Air Pollution Control District, **AQMD** = Air Quality Management District

⁵ **California Department of Occupational Safety and Health Administration's** (also known as DOSH) **Asbestos in Construction Standard** (8 CCR 1529) applies to all projects where at least one employee is working, and asbestos is being disturbed by any construction activity. Cal/OSHA also has General Industry and Shipyard Standards for asbestos that apply in situations where construction work is not taking place.

⁶ **"School District"** per the AHERA regulation refers to local education agencies (public and private elementary and secondary schools (typically considered K-12)) but does not apply to "for profit" schools.

⁷ **Asbestos Work** means any work that disturbs asbestos and/or materials containing asbestos at greater than one percent.
Note: Cal/OSHA has regulations for the disturbance of materials containing anything more than one tenth of one percent asbestos.

⁸ **Building** means any institutional, commercial, public, industrial, or residential structure, or installation, (including any structure, installation, or building containing condominiums or individual dwelling units operated as a residential cooperative); any ship; and any active or inactive waste disposal site. Any structure, installation or building that was previously considered a building regardless of its current use or function.

⁹ **ASHARA** - Asbestos School Hazard Abatement Reauthorization Act

<https://www.epa.gov/asbestos/asbestos-school-hazard-abatement-reauthorization-act-1990-one-hundred-first-congress-united>

¹⁰ **Compliance with much of the AHERA rule can be avoided** by School Districts if the site or school building was constructed after October 12, 1988. However, even for buildings for which the AHERA rule does not apply completely, Cal/OSHA and NESHAP rules still apply in their entirety.

¹¹ **Application of the NESHAP regulation to residential properties that would not normally fall under the Federal Asbestos NESHAP** regulation is typically due to local or regional APCD/AQMD rules.

¹² **RACM** – Regulated Asbestos Containing Waste. RACM is asbestos waste that contains more than one percent asbestos and is either friable or was removed by mechanical means. In California, RACM is considered a Hazardous Waste by Cal/EPA's Department of Toxic Substance Control and Title 22.

¹³ **Demolition** in regard to asbestos work means wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility. A building does not need to be wrecked in total for the project to be considered demolition. All demolitions trigger notification to the local NESHAPs enforcement agency, even if no asbestos is present on the project.

¹⁴ Cal/OSHA **General Industry Standard for Asbestos** - 8 CCR 5208
Cal/OSHA **Shipyard Standard for Asbestos** - 8 CCR 8358

¹⁵ **Materials that may contain asbestos** (aka- suspect materials) – this includes nearly all manufactured materials other than bare metal, raw lumber, glass, pre-formed and foam rubber materials, and a few other materials. Only an accredited building inspector can declare a material to be "non-suspect" for containing asbestos. Asbestos-containing materials also include soils in areas where naturally occurring asbestos exists.

¹⁶ When it comes to **buildings constructed recently** – there is no cutoff date for building construction materials to contain asbestos. Asbestos-containing construction materials, both legally installed (roof mastics, window glazing, floor tiles, etc.) and illegally installed (drywall joint compound and other friable materials) have been found in buildings constructed after 2010.

¹⁷ **Asbestos free by bulk sampling** – means that a material has been sampled per the appropriate AHERA protocol (regardless to whether it is a school building or not) at a minimum and every layer of every sample collected from the material has a result from a lab of “None Detected” for asbestos.

Responsibilities of Building Owners Regarding Asbestos-Related Construction Work

¹⁸ Potential Hazardous Materials on a construction project include heavy metals, PCBs, silica, total petroleum hydrocarbons, volatile organic compounds, refrigerant gases, and numerous other potentially hazardous materials.

¹⁹ **Cal/OSHA 1529 (construction) and Cal/OSHA 5208 (general industry) both require a building owner to have their building inspected for asbestos:**

8 CCR 1529(k)(1):

...Employers and building owners shall identify TSI and sprayed or troweled on surfacing materials in buildings as asbestos-containing, unless they determine in compliance with subsection (k)(5) of this section that the material is not asbestos-containing. Asphalt and vinyl flooring material installed no later than 1980 must also be considered as asbestos containing unless the employer, pursuant to subsection (g)(8)(A)9. of this section determines that it is not asbestos-containing. If the employer/building owner has actual knowledge, or should have known through the exercise of due diligence, that other materials are asbestos-containing, they too must be treated as such. When communicating information to employees pursuant to this standard, owners and employers shall identify “PACM” as ACM. Additional requirements relating to communication of asbestos work on multi-employer worksites are set out in subsection (d) of this section.

8 CCR 5208(J):

(3) Duties of employers and building and facility owners.

(A) Building and facility owners shall determine the presence, location, and quantity of ACM and/or PACM at the work site. Employers and building and facility owners shall exercise due diligence in complying with these requirements to inform employers and employees about the presence and location of ACM and PACM.

²⁰ **Asbestos Survey** – regulations require a building owner to inspect their buildings for asbestos, and then to notify contractors, occupants and tenants of what materials contain asbestos. While doing this is required, and complies with the regulations, the list of materials that allows a tenant or contractor to disturb a material without regard for asbestos is a list that contains the materials that were sampled and found to be asbestos free. The best asbestos surveys contain materials listed on a space by space basis and notes whether each material in each space contains asbestos or not. This becomes especially important when the same type of material may contain asbestos in some areas and not contain asbestos in other areas (such as is often the case with drywall). Consultants should provide accurate measurements of all materials surveyed, especially those found to contain asbestos.

²¹ **It is best if the asbestos survey encompasses the entire building.** When the asbestos survey encompasses the entire building, as opposed to the perceived area of construction only, then changes to the project can be made with full knowledge of what asbestos materials will be impacted. This allows for proper planning for cost and scheduling changes. Also – on contract plans where architects write “demo sufficient to install new” or similar statements, and where contractors are responsible to determine the areas of work (such as for an electrical home run), knowing exactly where asbestos materials exist, and where they do not can affect the approach taken by the contractor(s) involved in the project.

²² **“EPA AHERA Building Inspector”** per AHERA Appendix C - Model Accreditation Plan:

All persons who inspect for ACBM in schools or public and commercial buildings must be accredited. All persons seeking accreditation as an inspector shall complete at least a 3–day training course as outlined below. The course shall include lectures, demonstrations, 4 hours of hands-on training, individual respirator fit-testing, course review, and a written examination.

²³ **Certified Asbestos Consultant (CAC) or Certified Site Surveillance Technician (CSST)**

“Asbestos Consultant” means any person who contracts to provide professional health and safety services relating to asbestos- containing construction material as defined in this subsection, which comprises 100 square feet or more of surface area. The activities of an asbestos consultant include building inspection, abatement project design, contract administration, sample collection, preparation of asbestos management plans, clearance monitoring, and supervision of site surveillance technicians as defined in this subsection.

“Site Surveillance Technician” means any person who acts as an independent on-site representative of an asbestos consultant. The site surveillance technician monitors the asbestos abatement activities of others, provides asbestos air monitoring services for area and personal samples, and performs building surveys and contract administration at the direction of an asbestos consultant.

²⁴ **Asbestos, ACM, Presumed Asbestos-Containing Materials (PACM), and Assumed Asbestos-Containing Materials**

Asbestos - includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, actinolite asbestos, and any of these minerals that has been chemically treated and/or altered.

(ACM) - Asbestos Containing Material means any material containing more than one percent asbestos.

(PACM) - Presumed Asbestos Containing Material means thermal system insulation (TSI) and surfacing material found in buildings constructed no later than 1980.

(note – this post 1980 cutoff date does not apply to any materials that are not TSI or surfacing, and is not recognized by any agency (even for these materials) other than Cal and Fed OSHA, that regulates asbestos.)

Assumed Asbestos-Containing Material – any material that could contain asbestos, but which has not yet been sampled sufficiently to determine it to be “none detected” for asbestos per the EPA bulk sampling protocol that applies to the specific type/class of material.

²⁵ **Handled** – disturbed, removed, enclosed, encapsulated or any other activity that could impact the matrix of the material and release asbestos fibers.

²⁶ **Regulatory Liability (concerning hazardous materials) Cannot Be Transferred** – Liability concerning hazardous materials, including asbestos, remains with the building owner, not only during construction activities, but continuously even after the hazardous waste is buried at the landfill. Regulatory, and civil, liability remains with the building owner regardless of contract language/format or wording in specifications. Contract language/format, and various types of specification language can add parties which are liable for the handling and disposal of hazardous material, but they cannot transfer this liability from one entity (themselves) to another entity (Architects, CMs, Contractors, Consultants, etc.).

²⁷ **Notifications to Various Parties** (per 8 CCR 1529(k)(2)):

Building and/or facility owners shall notify the following persons of the presence, location and quantity of ACM or PACM, at the work sites in their buildings and facilities. Notification either shall be in writing, or shall consist of a personal communication between the owner and the person to whom notification must be given or their authorized representatives:

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

Employees of the owner who will work in or adjacent to areas containing such material:

On multi-employer worksites, all employers of employees who will be performing work within or adjacent to areas containing such materials;

Tenants who will occupy areas containing such material

²⁸ **Labeling requirements** (per 8 CCR 1529(k)(8)):

Labels shall be affixed to all products containing asbestos and to all containers containing such products, including waste containers. Where feasible, installed asbestos products shall contain a visible label.

Labels shall be printed in large, bold letters on a contrasting background.

Labels shall be used in accordance with the requirements of Section 5194 (f) of the General Industry Safety Orders, and shall contain the following information:

DANGER

CONTAINS ASBESTOS FIBERS

AVOID CREATING DUST

CANCER AND LUNG DISEASE HAZARD

Labels shall contain a warning statement against breathing asbestos fibers.

²⁹ **Building Owners Can Train In-house Workers to Disturb/Remove Asbestos.** However, the amount of ACM these workers can disturb/remove no more than 100 square feet per project as noted here:

From 8 CCR 1529(r)

“Asbestos-related work” means any activity which by disturbing asbestos-containing construction materials may release asbestos fibers into the air and which is not related to its manufacture, the mining or excavation of asbestos-bearing ore or materials, or the installation or repair of automotive materials containing asbestos.

Employers registered with the Chief in accordance with Sections 341.6 to 341.9 for conducting asbestos-related work involving over 100 square feet, as defined in Section 341.6(a), of asbestos-containing construction material shall be deemed to be in compliance with section 5203 for the asbestos-related work requiring registration.

³⁰ **Asbestos-Containing Construction Material (ACCM)** - means any manufactured construction material which contains more than one tenth of 1 percent asbestos by weight. This level of asbestos in a material triggers registration for a contractor, certification for a consultant and non-classified asbestos safe work practices and engineering controls (wet methods, drop cloths, HEPA vacuums, prompt cleanup, etc.) for the worker.

³¹ **Conflict of Interest.** From the CA Business and Professional Code Section 7187:

When a building owner or operator contracts with an asbestos consultant or site surveillance technician for performance of the activities described in Sections 7181 and 7182, that asbestos consultant or site surveillance technician shall not have any financial or proprietary interest in an asbestos abatement contractor hired for the same project.

³² **Asbestos free** – means that a material has been sampled per the appropriate AHERA protocol (regardless to whether it is a school building or not) at a minimum and every layer of every sample collected from the material has a result from the lab of “None Detected” for asbestos.

³³ **Local NESHAP Enforcement Agency** – In California – this is typically the APCD or AQMD that has jurisdiction over the location of the project. In Nevada, this would be the local Health Department.

³⁴ **Civil and Regulatory Liability** – For the purposes of this document, civil liability is based on one entity (person or organization) suing a second entity for due to the second entity have cause avoidable harm; Regulatory liability is based on whether the action of an entity could result in one or more citations being issued by a regulatory agency.

³⁵ **Safe Work Practices (including the use of PPE by the asbestos workers), Personal Air Monitoring, and Engineering Controls** – means that workers did not simply follow the minimum required regulatory processes but rather conducted their work in a fashion that protected their short and long-term health.

³⁶ **Documented and Retained for Decades** - Health related records, such a medical surveillance of workers exposed to asbestos, are required by Cal/OSHA to be retained by the employer for 30 years. If the employer goes out of business, these health-related records are to be sent to Cal/SOHA. Due to the 10 to 40-year latency period between asbestos exposure and the symptoms of asbestos related disease developing, records of proper work practices, PPE, and decontamination activities employed by workers on projects should be retained indefinitely for liability and Insurance reasons.

³⁷ **Insurance Requirements** – Building owners insurance companies, as well as contractor’s various insurance companies/policies, often require some documentation that an asbestos abatement project has been completed properly. This is often documented by the collection of air samples at the conclusion of a project, even when “clearance air samples” are not required by any applicable regulation. In CA, the only buildings required by regulations to have (aggressive) clearance air sampling collected and passed are K-12 school buildings.

[Responsibilities of Environmental Consultants Regarding Asbestos-Related Construction Work](#)

³⁸ **Environmental Consultants** – For asbestos purposes, the environmental consultant must be a Cal/OSHA Certified Asbestos Consultant (CAC) or a Cal/OSHA Certified Site Surveillance Technician (CSST) that works under the guidance and direction of a CAC.

³⁹ **Common Environmental Hazards** – can include construction materials that contain asbestos, heavy metals (lead, mercury, beryllium, cadmium, chromium, etc.), mold, naturally occurring asbestos, PCBs, silica, refrigerant gases (such as Freon), volatile organic compounds, hydrocarbons, etc.

⁴⁰ **Existing and Potential Asbestos Hazards** – Existing asbestos hazards are materials that are friable, and which could release asbestos fibers readily. Potential asbestos hazards include materials known to contain asbestos which could be made friable during construction and materials that have either not been sampled or not been sampled sufficiently to determine if they contain asbestos.

⁴¹ **Difference Between Projects Conducted Legally and Project Conducted Safely** – Projects conducted safely are conducted in a fashion that complies with the current understanding of what is safe for workers, and the environment in general, even if the regulations have not yet adopted these *safe* limits on the level of exposure. For instance, Cal/OSHA’s regulations contain a “permissible” level of exposure to asbestos (0.1 fiber per cubic centimeter for an 8-hour time weighted average) for which a worker can be exposed to without being required to wear a respirator, yet Cal/OSHA also states that there is no “safe” level of exposure to asbestos. For lead this issue exists as well, where Cal/OSHA allows a worker to work without respiratory protection when there is less than 50 micrograms of lead per cubic meter of air, while the National Institute of Occupational Safety and Health (NIOSH) claims the “safe” level of lead exposure over an eight-hour time weighted average is between 0.5 and 2.3 micrograms of lead per cubic meter of air.

⁴² Specification for asbestos remediation must be written by a Certified AHERA Project Designer. From Cal/OSHA 1529:
8 CCR 1529 (q) Certified Asbestos Consultants and Certified Site Surveillance Technicians.

(1) The following definitions are applicable to subsection (q) only:

“Asbestos consultant” means any person who contracts to provide professional health and safety services relating to asbestos- containing construction material as defined in this subsection, which comprises 100 square feet or more of surface area. The activities of an asbestos consultant include building inspection, abatement project design, contract administration, sample collection, preparation of asbestos management plans, clearance monitoring, and supervision of site surveillance technicians as defined in this subsection.

⁴³ **Consultants should conduct as Thorough a Survey as Possible** – This should include investigation of non-traditionally accessed areas and materials which may not be accessible without damage to existing building finishes. Asbestos inspections should not be limited to planned construction areas; if possible, inspections should include the entire building.

⁴⁴ With a few exception exceptions - such as solid lumber, solid glass, fiberglass, bare metal, most plastics, most porcelain, pre-formed rubber products, tiles made of ceramic or terracotta and a few other materials – everything is considered by one regulation or another to be suspected to contain asbestos until sampled and proven otherwise. Materials remain suspect, regardless of installation date, until sampled per the EPA AHERA sampling protocol appropriate for the type of material.

⁴⁵ **AHERA Sampling Protocols** (required number of sample to declare a material to be none detected for asbestos):

Thermal System Insulation (TSI) –	3 samples per homogeneous TSI system (1 sample for a patch of 6 feet or less)
Friable Surfacing Materials	- 3 samples for up to 1000 square feet, 5 samples for between 1000 and 5000 square feet, 7 samples for more than 5000 square feet
All other materials	- Sufficient number of samples determined by the accredited building inspector

⁴⁶ **Value Engineering** - Consultants should be open to contractor approaches that save the project either time or money. On publicly bided projects, value engineering must provide some benefit to the project for a change to be valid, it cannot be solely to the benefit of the remediation contractor. The most important issue for the consultant to consider when reviewing value engineering submissions from contractors is whether regulatory or civil liability on the project is increased. If the value engineering submission or suggestion increases the liability associated with remediation work, it should be rejected.

⁴⁷ **Project set-up, including containment set-up is often the most important time for a consultant to be on site once a project starts.** If the containment is set up poorly, there is no guarantee that the work has been properly isolated from the surrounding environment. If the containment is set-up properly, even if things go significantly wrong inside the contained work area, the surrounding environment is much less likely to suffer exposures and contamination.

⁴⁸ **Clearance Activities Include:**

- visual inspection to assure all work scheduled to be conducted, has been conducted.
- visual inspection to assure no visible dust or debris remains in the work area (this includes no remaining three-dimensional debris of any kind).
- collection of aggressive clearance air samples.

⁴⁹ **Tear Down Activities include:**

- assuring all containment poly and tape have been removed.
- assuring no unanticipated damage has been done to the work area or adjacent areas of the building.
- assuring that any asbestos containing material or debris, that may have gotten behind the containment poly, is properly cleaned up.

⁵⁰ **Paperwork Requirements** include assuring all submittals (required at bid, pre-construction, during construction, and at project completion) have been received from the contractor. Required submittals should be listed in the project specifications. Closeout documents should include waste manifests and notification of all asbestos containing materials remaining in the work area after the project has been completed.

⁵¹ **Cal/EPA's Department of Toxic Substance Control's Title 22 regulates hazardous waste in California.** This is the rule that requires Federally Regulated Asbestos Containing Materials (RACM means friable materials containing more than 1% asbestos) to be handled as hazardous waste.

⁵² **Remaining Materials Notification** - Cal/OSHA 1529 (k)(C) Within 10 days of the completion of such work, the employer whose employees have performed work subject to this standard, shall inform the building/facility owner and employers of employees who will be working in the area of the current location and quantity of PACM and/or ACM remaining in the area and final monitoring results, if any.

⁵³ **For sites where asbestos remains, training should be two-hour asbestos awareness at a minimum.** If the possibility that asbestos materials will be disturbed by non-remediation contractors, the level of training must be consistent with the amount of asbestos and type of asbestos materials that will be disturbed, as well as how those materials will be impacted. Training may need to be as much as 32 hours for workers and 40 hours for supervisors in length but can typically be completed in 16 (sometimes less) hours provided non-remediation contractors will only impact asbestos in small amounts (one waste or glove bag).

⁵⁴ **Regulated Area** - an area established by the employer to demarcate areas where Class I, II, and III asbestos work is conducted, and any adjoining area where debris and waste from such asbestos work accumulate; and a work area within which airborne concentrations of asbestos exceed, or there is a reasonable possibility they may exceed, the permissible exposure limit. Regulated areas are demarcated by signage warning of the potential exposure to asbestos fibers, and restricting access to the area only to authorized personnel.

⁵⁵ **Asbestos Competent Person** – the asbestos competent person may be, but is not required to be, the overall Competent Person for the employer on a project site.

Partial quote from 8 CCR 1529 (o):

On all construction worksites covered by this standard, the employer shall designate (an asbestos) competent person. . .

The competent person shall make frequent and regular inspections of the job sites, in order to perform the duties set out below in subsection (o)(3)(A). For Class I jobs, on-site inspections shall be made at least once during each work shift, and at any time at employee request. For Class II, III and IV jobs, on-site inspections shall be made at intervals sufficient to assess whether conditions have changed, and at any reasonable time at employee request.

On all worksites where employees are engaged in Class I or II asbestos work, the competent person designated in accordance with subsection (e)(6) of this section shall perform or supervise the following duties, as applicable:

- 1. Set up the regulated area, enclosure, or other containment;*
- 2. Ensure (by on-site inspection) the integrity of the enclosure or containment;*
- 3. Set up procedures to control entry to and exit from the enclosure and/or area;*
- 4. Supervise all employee exposure monitoring required by this section and ensure that it is conducted as required by subsection (f) of this section;*
- 5. Ensure that employees working within the enclosure and/or using glove bags wear respirators and protective clothing as required by subsections (h) and (i) of this section;*
- 6. Ensure through on-site supervision, that employees set up, use, and remove engineering controls, use work practices and personal protective equipment in compliance with all requirements;*
- 7. Ensure that employees use the hygiene facilities and observe the decontamination procedures specified in subsection (j) of this section;*
- 8. Ensure that, through on-site inspection, engineering controls are functioning properly, and employees are using proper work practices; and,*
- 9. Ensure that notification requirement in subsection (k) of this section are met.*

For Class I, and II asbestos work the competent person shall be trained in all aspects of asbestos removal and handling, including: abatement, installation, removal and handling; the contents of this standard; the identification of asbestos; removal procedures, where appropriate; and other practices for reducing the hazard. Such training shall be obtained in a comprehensive course for supervisors, that meets the criteria of EPA's Model Accredited Plan (40 CFR Part 763, Subpart E, Appendix C).

For Class III and IV asbestos work, the competent person shall be trained in aspects of asbestos handling appropriate for the nature of the work, to include procedures for setting up glove bags and mini-enclosures, practices for reducing asbestos exposures, use of wet methods, the contents of this standard, and the identification of asbestos. Such training shall include successful completion of a course that is consistent with EPA requirements for training of local education agency maintenance and custodial staff as set forth at 40 CFR 763.92(a)(2), or its equivalent in stringency, content, and length.

⁵⁶ **Exposing Employer** - The "exposing employer" is an employer whose employees were exposed to the violative condition at the worksite regardless of whether that employer created the violative condition. Before the adoption of 8 CCR Section 336.11, the exposing employer was the only category of employer that could be cited by the Division.

⁵⁷ **Creating Employer** - is an employer who actually created the violative condition.

⁵⁸ **Controlling Employer** - is an employer who is responsible for safety and health conditions at the worksite and who has the authority to correct the violation.

⁵⁹ **Correcting Employer** - is an employer who has the specific responsibility to correct the violative condition.

⁶⁰ **Conflict of Interest for a General/Prime/Sub Contractor to Collect Samples** – though there are some exceptions to this conflict of interest in the CA Business and Professionals code, and the ASHARA regulations – those exceptions are limited by type of site and number of samples, and may not be recognized by all applicable regulations even when in compliance with the CA B&P code and the ASHARA regulation.

⁶¹ **ACM** – Asbestos-Containing Material (Materials containing more than 1% asbestos in any layer of the material.)

⁶² **ACCM** – Asbestos-Containing Construction Material (Manufactured material containing more the one tenth of 1% asbestos in any layer of the material.)

⁶³ **PACM** – Presumed Asbestos-Containing Material (Friable surfacing materials or thermal system insulations installed prior to 1/1/1981)

⁶⁴ **NOA** – Naturally Occurring Asbestos.

⁶⁵ **Asbestos Awareness Training** – this two-hour training is designed to acquaint workers with where asbestos comes from, what materials it can be found in, the health effects of exposures to asbestos, and how to avoid disturbance of ACM. This training includes what to do if workers find asbestos has been disturbed but does not provide sufficient training to allow workers to disturb or cleanup asbestos.

⁶⁶ **Report of Use** – Per 8 CCR 5203 All employers who use a regulated carcinogen shall report that use in writing to the Chief as required by this section. Note: Asbestos has additional report of use and asbestos-related work registration requirements in sections 1529, 5208, and 8358.

Employers registered with the Chief in accordance with Sections 341.6 to 341.9 for the purpose of conducting asbestos-related work involving over 100 square feet, as defined in Section 341.6(a), of asbestos-containing construction material shall be deemed to be in compliance with section 5203 for the asbestos-related work requiring registration. Except that emergencies as defined in section 5203(a) must be reported as required in section 5203(f).

⁶⁷ **Environmental contractors subcontract to remove asbestos hazards in specifically defined areas of a construction site but, often, note that other subcontractors are improperly disturbing those same materials** elsewhere on the same construction site. Environmental contractors should notify the general/prime contractor of this issue and remind the general/prime of their responsibilities under the Multi-Employer Worksite regulation.

⁶⁸ **California Health and Safety Code, Cal/OSHA and U. S. EPA regulations require the assumption of asbestos being present in buildings**, regardless of building age, therefore, the architect/cm must consider this information in the design, estimating, and bidding process.

⁶⁹ **Architects/cm are responsible for assisting their clients in complying with applicable regulations** including the type of contractor allowed to bid on work. Architects should ensure that their clients understand the need to utilize qualified contractors to conduct

asbestos-related construction work. Contractors without the necessary training and work practices may contaminate the building with asbestos dust and debris. This may result in lead exposure hazards to the building occupants and improper exposure to asbestos for the contractors' employees.

⁷⁰ **What to look for in an asbestos report to assure it is thorough and complete** includes more than simply the regulatorily required listing of the quantity and location of asbestos materials. All materials for which the environmental, and other contractors, are not given evidence to the contrary, must be considered asbestos-containing. A list of materials that have been found to be none detected for asbestos should also be issued. The best surveys list asbestos and non-asbestos-containing materials on a space by space basis. This is particularly helpful when one type of material, such as drywall, may contain asbestos in some locations but not in others.

Additional items that should be reviewed include, but are not limited to, the number of samples collected for each material for compliance with the EPA AHERA sampling protocols, whether all materials have been sampled or assumed, whether waste profiles have been properly conducted (this may include point counting of materials) and whether all potential areas of construction (this includes areas adjacent to the planned work area and could include the entire building) have been surveyed.

⁷¹ **What licenses, registrations and training abatement and non-abatement contractors (and their workers) are required to have** is different on every project:

Most asbestos abatement contractors must carry the CSLB C-22 trade license and must be registered with DOSH as an abatement contractor.

Abatement contractors' supervisors and workers must be trained per the EPA AHERA requirements, 40 hours or 32 hours respectively.

Non-abatement contractors who work around asbestos, but do not disturb it, must be at least asbestos awareness trained. Non-abatement contractors' workers disturbing minimal amounts of asbestos (up to one waste or glove bag) must be at least Cal/OSHA Class III training, typically a 16-hour training.

Any contractor disturbing more the 100 square feet of ACCM on a project must be a CSLB licensed (or certified) and DOSH registered asbestos abatement contractor.

⁷² **Regulatorily required notifications required on a project** include:

Per Cal/OSHA for building owners having asbestos work conducted:

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

Employees of the owner who will work in or adjacent to areas containing such material:

On multi-employer worksites, all employers of employees who will be performing work within or adjacent to areas containing such materials;

Tenants who will occupy areas containing such material

Per Cal/OSHA for asbestos contractors:

Send notices of temporary worksites, where asbestos will be disturbed in any amount, to the nearest Cal/OSHA District Office 24 hours prior to the start of work.

Post a warning sign readable at 20 feet out from regulated area.

Environmental contractors must create and submit to the building owner a list of all asbestos containing materials in their project area(s) which were left in place at the conclusion of their work.

Per Federal EPA NESHAP

For all demolition projects and renovations projects entailing the disturbance of more than 160 square feet or 260 linear feet of RACM, send notification of start and completion dates, location of work, amount of RACM to be removed and appropriate fees to local NESHAP enforcement (typically local AQMD or APCD in California).

⁷³ **Costly Pitfalls** - by identifying hazardous materials early in the project design process, and suggesting ways to avoid their disturbance, the entire project team can help design projects that cost less and require less time. There is no way to accurately estimate the cost or time required for asbestos remediation unless the quantity and location of asbestos-containing materials are known.

Limiting the number of containments and the number of days an abatement contractor is allowed to complete their work on a project can significantly reduce the overall cost of remediation. Of course, in order to limit the number of containments and/or the number of days the remediation contractor has to complete a project requires full knowledge of what exactly asbestos materials must be removed.

On projects where the amount of asbestos-containing materials cannot be accurately quantified, costs and schedules can still be controlled by the use of additive/deductive unit prices for finding more or less asbestos-containing materials than estimated.

Some projects allow the General Contractor to control the number of containments and the number of days on site that the asbestos abatement contractor will work. While this is convenient for the General Contractor, it curtails the ability for the project team to control the cost of the project. If for no other reason, allowing the General Contractor to control the remediation contractor's schedule, the environmental contractor's schedule is completely unpredictable. Every time the remediation contractor sets up another containment, another set of clearance air samples will be required – this can add more than \$1000 per containment to the cost of a project.

Hazardous materials other than asbestos (lead, mercury, PCBs, etc.) must also be considered whenever asbestos is disturbed or removed.

End of Policy