



Asbestos:

A Contractor's Guide and Open Book Examination

Contractors State License Board

IMPORTANT:

- You **MUST** take the Open Book Exam and **SIGN** the verification form.
- Submit completed verification form with your bond verification and license fee notice.
- If you do not submit this form, the Board **CANNOT** process your application for licensure.

Section 7058.5 (b) of the Business and Professions Code states:

The Contractors State License Board shall make available to all applicants, either on the board's Internet website or, if requested, in hard copy, a booklet containing information relative to handling and disposing of asbestos, together with an open book examination concerning asbestos-related work. All applicants for an initial contractor license shall complete the open book examination and, prior to the issuance of a contractor's license, submit it to the board electronically or by mail if the applicant elects to use the hard-copy format.



Table of Contents

Introduction.....	5
Overview	5
Goals	5
Objectives	6
Asbestos.....	7
Introduction	7
Properties	8
Examples of Uses in Construction	8-12
(Tables 1– 6)	1
Status of Asbestos-Containing Products	13
Labeling of Asbestos-Containing Products	14
Exposure to Asbestos	15
Is Asbestos Dangerous?.....	15
Who Might Be Exposed to Asbestos?.....	15
How Does Exposure to Asbestos Occur?	16
Levels of Exposure	16
Permissible Exposure Limit	16
Excursion Limit	16
Cal/OSHA Classes of Work	17
Record Keeping	18



Table of Contents

Asbestos and Your Health	19
Types of Diseases	19
Asbestosis	19
Lung Cancer	19
Mesothelioma.....	20
Other Cancers	20
Medical Examinations.....	20
Risk Factors.....	21
Asbestos-Related Work.....	22
Introduction	22
Asbestos Certification, C-22 Asbestos Abatement License, and Cal/OSHA (DOSH) Registration	24
Exception	25
Uncertified/Unlicensed Contractors	25
Bids.....	25
Fines and Penalties.....	26
Accreditation for Public and Private Schools	26
Fines and Penalties.....	27
NESHAP Regulations	27
NESHAP Notification Requirement	28
Work Practices to Follow Under NESHAP	28
Fines and Penalties.....	29

Table of Contents

Comparison of NESHAP to Cal/OSHA (DOSH) and CSLB	31 (Table 7)
Governing Laws.....	32
California Laws Governing Contractors Who Work with Asbestos.....	32-35 (Tables 8–12)
Guidelines for Handling Asbestos.....	36
Introduction	36
Identifying Asbestos	36
Determining the Presence of Asbestos	37
Fines and Penalties.....	37
Federal and State Asbestos Standards for the Construction Industry	38
Asbestos Training Requirements.....	38
Asbestos Abatement Work	38
Summary.....	40
Reporting Incidents of Exposure	41
Contract Protection.....	41
Resources	43-45
Asbestos Open Book Exam	46-51
Verification Form	52
Answer Sheet	53-54
Answers	55



Table of Contents

List of Tables

Table 1: Ceilings, Walls, and Insulation.....	9
Table 2: Pipe and Boiler Covering and Lagging	10
Table 3: Flooring.....	11
Table 4: Roofing and Siding	11
Table 5: Asbestos Cement Pipe	12
Table 6: Fireproof Textiles.....	12
Table 7: Comparison of NESHAP to Cal/OSHA and CSLB Regulations	31-32
Table 8: Business and Professions Code, Contractors License Law.....	33
Table 9: Labor Code, Division 5	34
Table 10: Health and Safety Code.....	35
Table 11: California Code of Regulations, Title 8	35
Table 12: California Code of Regulations, Title 16	35



Introduction

Overview

The Contractors State License Board (CSLB) provides this asbestos information guide to all applicants when they pass their law and trade examinations, or when CSLB requests the applicant's bond and license fee from those who are approved for an exam waiver. As an applicant, you must read this booklet and complete the open book examination at the back of this book. The verification and answer sheet must be submitted to CSLB with your bond verification and license fee.

This booklet provides an overview of asbestos information. To fully understand your obligations, review the referenced regulations and contact the relevant agencies.

5

Goals

After reading this booklet, you will be familiar with:

- What asbestos is
- Health hazards related to asbestos
- Basic laws and regulations regarding abatement of asbestos-containing materials
- Materials suspected of containing asbestos
- Who can remove asbestos-containing materials
- Reporting requirements
- Training requirements for all individuals who work with asbestos-containing materials
- Agencies to contact if more information is needed or desired
- Methods for avoiding contact with asbestos-containing materials



Introduction

Objectives

You will be aware of the risks of dealing with asbestos and possess the knowledge necessary to respond appropriately to construction situations where asbestos is or may be present.

Using the information provided in this booklet, you will demonstrate an understanding of the following:

- Health issues associated with asbestos exposure
- Diseases caused by exposure to asbestos
- How exposure to asbestos occurs
- How to prevent exposure to asbestos



Asbestos

7

Introduction

Asbestos is a naturally occurring mineral fiber that has been used extensively in construction and many other industries. Manufacturers have used asbestos in their commercial products because asbestos is noncombustible, noncorrosive, nonconductive, and has high tensile strength. Asbestos fibers have been mixed with binding agents to create approximately 3,600 different commercial products. The amount of asbestos contained in these products can vary from 1/10th of 1.0 percent to 100 percent. Asbestos is currently not illegal in the United States and any building could have asbestos-containing materials present regardless of the age of the facility or the date of manufacture. Therefore, there are no date restrictions when testing or surveying for asbestos on renovation and demolition projects.

The following six types of asbestos are regulated federally and in the state of California. The three most commonly used of these are amosite, chrysotile, and crocidolite.

1. Actinolite – white, brown, gray, green in color, or translucent
2. Amosite – brown in color; used most frequently in cement sheets and pipe insulation
3. Anthophyllite – white in color; used for insulation products and construction materials
4. Chrysotile – white in color; the most commonly used type of asbestos
5. Crocidolite – blue in color; used most frequently to insulate steam engines, spray-on coatings, pipe insulation, plastic, and cement products



Asbestos

6. Tremolite – white, brown, gray, green in color, or translucent

Asbestos is regulated federally at >1.0 percent asbestos-containing material and by the State of California at >0.1 percent asbestos-containing construction material. Federal and State regulations are enforced by the following agencies:

Environmental Protection Agency (EPA)

- California Air Resources Board (CARB)
- Department of Toxic Substance Control (DTSC)
- Local Air Districts (APCD/AQMD)

Occupational Safety and Health Regulations (OSHA)

- Cal/OSHA — Division of Occupational Safety and Health (DOSH)

8

Properties

Asbestos has several special properties that led to its widespread use in the construction industry. Asbestos fibers have been added to materials that:

- Fireproof
- Insulate
- Soundproof
- Decorate

Examples of Uses in Construction

Tables 1–6 show how asbestos-containing materials have been used in construction, the time periods in which they were used, and how asbestos fibers can be released into the air. There is also potential for exposure to asbestos through naturally occurring asbestos (NOA).

TABLE 1: CEILINGS, WALLS, AND INSULATION

LOCATION/PRODUCT	HOW FIBERS ARE RELEASED	COMMENTS
Sprayed-on insulation (e.g., on ceilings, walls, and steelwork) <ul style="list-style-type: none"> • acoustical • thermal • fireproofing • decoration • condensation control 	Disturbances during renovation/demolition. Water damage Deterioration Impact Vibration	In use from 1935 to 1970. EPA banned nearly all uses in 1973.
Insulation under/around heat sources such as stoves and fireplaces (e.g., asbestos-containing cement sheets or paper)	Disturbances during renovation/demolition. Sanding Scraping Cutting Dry sweeping	In use from 1930 to 1972.
Patching or Taping Compound	Disturbances during renovation/demolition. Sanding Scraping Demolishing	In use from 1945 to 1977, when U.S. imposed ban. Ban did not affect products already on market, so joint-taping compounds containing asbestos were still sold after that time.
Some Types of Wallboard	Disturbances during renovation/demolition. Cutting Damage	In use from 1977 to present in some imported wallboard.
Insulation “sandwiched” between plaster walls and behind ceilings	Disturbances during renovation/demolition. If located in the air stream, fibers may be disturbed by the air flow, releasing fibers throughout the building.	In use from 1900 to 1973.
Electrical Insulation	Disturbances during renovation/demolition. Damage Fraying Deterioration	In use from 1930s to present.

Asbestos

TABLE 1: CEILINGS, WALLS, AND INSULATION (CONTINUED)

LOCATION/PRODUCT	HOW FIBERS ARE RELEASED	COMMENTS
Some Textured Paints (small amounts)	Disturbances during renovation/ demolition. Sanding Scraping Cutting	In use from 1900 to present.
Wallcovering – Vinyl Wallpaper	Disturbances during renovation/ demolition. Sanding Scraping Cutting	In use from 1920s to present.

TABLE 2: PIPE AND BOILER COVERING AND LAGGING

LOCATION/PRODUCT	HOW FIBERS ARE RELEASED	COMMENTS
Blocking (corrugated paper)	Damage Cutting Deterioration	EPA banned in 1996.
Pre-molded Pipe Covering sections (corrugated paper)	Damage Cutting Deterioration	EPA banned in 1996.
Corrugated Asbestos Paper (air cell)	Damage Cutting Deterioration	EPA banned in 1996.
Asbestos-Paper Tape on Furnaces, Steam Valves, Flanges	Damage Cutting Deterioration	EPA banned in 1996.

TABLE 3: FLOORING

LOCATION/PRODUCT	HOW FIBERS ARE RELEASED	COMMENTS
Vinyl Tiles (binding agent)	Removal Sanding Dry-scraping Cutting Polishing	In use from 1950 to present.
Asphalt Tiles (binding agent)	Removal Sanding Dry-scraping Cutting Polishing	In use from 1920 to present.
Vinyl Sheet Flooring Backing	Removal Sanding Dry-scraping Cutting Polishing	In use between 1950 and 1990. EPA banned in 1990.
Flooring Felt	Removal Sanding Dry-scraping Cutting Polishing	EPA banned in 1990.

TABLE 4: ROOFING AND SIDING

LOCATION/PRODUCT	HOW FIBERS ARE RELEASED	COMMENTS
Roofing and Siding (binding agent in portland cement), • Shingles (1971-1974) • Sheets	Replacing Repairing Demolishing Cutting	In use from 1920s to present.
Roofing Felt	Replacing Repairing Demolishing Cutting	In use from early 1900s to present.
Roofing Sealants Around Penetrations, Seams, Repairs	Replacing Repairing Demolishing Cutting	In use from early 1900s to present.

Asbestos

TABLE 5: ASBESTOS CEMENT PIPE

LOCATION/PRODUCT	HOW FIBERS ARE RELEASED	COMMENTS
Cement Piping and Pipe Fittings	Demolishing Cutting Removing Grading Bursting Reaming	In use from 1935 to present.

TABLE 6: FIREPROOF TEXTILES

LOCATION/PRODUCT	HOW FIBERS ARE RELEASED	COMMENTS
Fireproof Cloth	Deterioration Damage Handling during renovation or removal	In use from late 1800s to present.
Fireproof Blankets	Deterioration Damage Handling during renovation or removal	In use from 1910 to present.
Fireproof Curtains	Deterioration Damage Handling during renovation or removal	In use from 1945 to present.

12

Status of Asbestos-Containing Products

In 1990, the Environmental Protection Agency's (EPA's) Asbestos Ban and Phase Out (ABPO) Rule banned the manufacturing, processing, or importation of flooring felt and new uses of asbestos. However, a later court decision determined the following asbestos-containing materials were no longer subject to the ABPO Rule:

- Asbestos-cement corrugated and flat sheet
- Asbestos-cement shingles and pipe
- Asbestos clothing
- Millboard
- Pipeline wrap
- Roofing felt
- Non-roofing and roof coatings
- Vinyl-asbestos floor tile

13

The court decision meant that asbestos-containing materials no longer subject to the ABPO Rule could be manufactured, processed, imported, and used in the United States (*Corrosion Proof Fittings v. EPA* [5th Cir., 1991] 947 F. 2d 1201).

As of 1996, the following asbestos-containing products were banned from manufacture, processing, or importation:

- Corrugated paper
- Rollboard
- Commercial paper
- Specialty paper

However, there are an unknown quantity of these asbestos-containing building materials still in use that were placed prior to being banned.



Asbestos

Be aware that asbestos-containing materials may be encountered in any renovation/remodel project regardless of the age of the facility or date of manufacture. Any building could still contain asbestos-containing materials and should be surveyed prior to renovation/demolition.

Labeling of Asbestos-Containing Products

In 1986, the U.S. Consumer Product Safety Commission (CPSC) required labeling of products containing asbestos. These products include:

- Asbestos paper and millboard
- Asbestos cement sheet
- Dry-mix asbestos furnace or boiler cement
- Central hot-air furnace duct connectors containing asbestos

14

In 1990, the EPA required labeling of all flooring felt stock on hand.

In 1996, the EPA required labeling of commercial paper, corrugated paper, rollboard, and specialty paper.

The ABPO Rule requires manufacturers, processors, or importers to label asbestos-containing material while the material remains in distribution.



Exposure to Asbestos

Is Asbestos Dangerous?

Inhalation of asbestos fibers can be deadly. Even short-term exposure to asbestos fibers can be harmful. For example, in documented cases, family members of asbestos workers have been sickened by exposure to asbestos fibers on the workers' clothing. Authorities believe there is no safe level of exposure, and many experts believe the more a person is exposed to asbestos, the higher the risk of contracting an asbestos-related disease.

Who Might Be Exposed to Asbestos?

Work in renovation, demolition, and construction may result in exposure to asbestos, either directly or indirectly (i.e., as a result of the activity of nearby workers in other trades) and from naturally occurring asbestos (NOA). The list below includes some of the construction-related workers who may be exposed to asbestos on the job:

- Bricklayers
- Carpenters
- Cement masons
- Demolition contractors
- Drywall tapers
- Earth movers/graders
- Electricians
- Floor coverers
- Fumigators
- General building maintenance workers
- General manufactured housing contractors
- Glaziers
- Heat and frost insulators
- Heating/air-conditioning workers
- Home improvement contractors
- Janitorial workers
- Laborers
- Landscapers
- Operating engineers
- Painters/decorators
- Plasterers
- Plumbers
- Renovators
- Roofers

Exposure to Asbestos

- Sheet metal workers
- Sprinkler fitters
- Stationary engineers
- Steamfitters
- Welders

How Does Exposure to Asbestos Occur?

Exposure to asbestos occurs when asbestos fibers are released into the air. Typically, asbestos fiber is so small that it cannot be seen with the naked eye. In fact, asbestos fibers can pass through normal vacuum cleaner filters and escape into the air. The fibers are so light that they can stay airborne for many hours. These properties increase the extent of asbestos exposure for individuals within the affected area.

Asbestos-containing material that can be crumbled by hand pressure or impact, causing the asbestos fibers to become airborne is called **friable**. Asbestos fibers can be inhaled and embedded in the lungs. Fibers caught in the throat can be carried and ingested. The body has no natural mechanism to remove these fibers.

16

Levels of Exposure

While there is no “safe” level of exposure to asbestos, to help protect workers handling asbestos-containing materials, the federal Occupational Safety & Health Administration (OSHA) established two levels of exposure: permissible exposure limit (PEL) and the excursion limit.

Permissible exposure limit (PEL) – defined as exposure to an airborne concentration of asbestos not to exceed 0.1 fibers per cubic centimeter of air (0.1 f/cc) averaged over an eight-hour work day.

Excursion limit – defined as exposure to an airborne concentration of asbestos not to exceed 1.0 fibers per cubic centimeter of air (1.0 f/cc) averaged over a sampling period of 30 minutes.

Cal/OSHA Classes of Work

Cal/OSHA classifies asbestos abatement work into four categories or classes (I, II, III, IV). Contractors should know which class of work pertains to their project.

Class I – Means activities involving the removal of thermal system insulation (TSI), surfacing asbestos-containing material (ACM), and presumed asbestos-containing material (PACM).

Class II – Means activities involving the removal of ACM that is not TSI or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

Class III – Means repair and maintenance operations where ACM, including TSI and surfacing ACM, and PACM, is likely to be disturbed.

17

Class IV – Means maintenance and custodial construction activities during which employees contact, but do not disturb, ACM or PACM, and activities to clean up dust, waste, and debris resulting from Class I, II, and III activities.

All or some of the following activities may apply, depending on the abatement class:

- Warning signs
- Regulated work areas
- Hygiene/decontamination facilities
- Personnel training
- Personal protective equipment
- Prohibited behaviors (e.g., smoking, eating, drinking)
- Air monitoring
- Housekeeping and disposal



Exposure to Asbestos

Record Keeping – Complete and accurate records of the following must be kept and maintained for at least 30 years in accordance with Cal/OSHA and EPA guidelines:

- Medical exams
- Training records
- Respirator fit test records
- Exposure measurements
- Required notification records

These records must be made available to employees and former employees upon request.



Asbestos and Your Health

Types of Diseases

A worker can either inhale or ingest airborne asbestos fibers. Once inhaled or ingested, asbestos fibers can easily penetrate body tissues. Exposure to asbestos may cause several serious diseases.

Asbestosis (aka “white lung”) – A serious, chronic, non-cancerous respiratory disease that occurs when asbestos fibers lodge in the lungs. The lung tissues become irritated, and the small air tubes and sacs in the lungs become inflamed. As the inflammation heals, permanent scar tissue (called fibrosis) remains.

- *Early Symptoms:* Shortness of breath, coughing, fatigue
- *Treatment:* There is no effective treatment for this condition
- *Prognosis:* Disabling or fatal

19

Lung Cancer – Malignant lung tumor(s) are five times more common in people exposed to asbestos than in those not exposed. A smoker who is heavily exposed to asbestos is 30 to 90 times or more likely to develop lung cancer than a nonsmoker.

- *Early Symptoms:* Coughing, changes in breathing, shortness of breath, chest pains, hoarseness, and anemia
- *Treatment:* There is no cure; however, if diagnosed early, medical treatment is available
- *Prognosis:* Disabling or fatal

Asbestos and Your Health

Mesothelioma – A deadly form of cancer that may occur from relatively light exposure to asbestos. This cancer involves the lining of the chest and abdomen.

- *Early Symptoms:* Shortness of breath, chest or abdominal pain
- *Treatment:* There is no effective treatment for this condition
- *Prognosis:* Fatal

Other Cancers – Exposure to asbestos is also thought to result in cancers of the esophagus, larynx, stomach, colon, rectum, and gastrointestinal tract. These diseases may be due to ingesting some asbestos fibers that are caught in the upper air passages and then carried to the throat in mucous.

20

- *Treatment:* There is no cure; however, if diagnosed early, medical treatment is available.

Individuals who contract an asbestos-related disease often do not show symptoms for 10 to 30 years after exposure.

Medical Examinations

Workers who are frequently exposed to asbestos must receive medical examinations on a regular basis. All asbestos abatement workers should be given a full physical when hired and annually thereafter. These medical exams must include the following tests:

- Complete medical and work history (specifically symptoms of the respiratory systems, cardiovascular systems, and digestive tract)
- Chest x-ray
- Pulmonary function test
- Any lab or other tests the doctor deems necessary



Risk Factors

The amount of asbestos exposure, the length of exposure, and number of exposures all seem to influence the likelihood of developing an asbestos-related disease. The higher the total exposure to asbestos, the greater the risk of becoming ill.

Reduce this risk by taking the necessary precautions to limit the exposure to asbestos as much as possible. There is no “safe” level of exposure to asbestos.

As mentioned previously, smoking greatly increases the chances of contracting an asbestos-related disease.



Asbestos-Related Work

Introduction

As a contractor, you are required to be aware of the presence of asbestos on a job. The property owner, general contractor, or contractor must determine whether asbestos is present before employees begin work on a project.

The contractor(s) must always presume that asbestos is present in any building or structure unless the owner can produce proof that materials are asbestos-free. The owner's response should be documented. The property owner, general contractor, or contractor must perform due diligence to prove the presence or absence of asbestos before disturbing suspect building materials on any building or structure built at any time.

22

During the pre-job safety conference, the asbestos contractor must provide a copy of his or her Cal/OSHA (DOSH) registration to the prime/general contractor and any other employers at the site before beginning any asbestos-related work.

To obtain Cal/OSHA (DOSH) registration the asbestos contractor must provide documentation that the contractor has CSLB asbestos certification or licensure; employee health insurance coverage and workers compensation insurance; that all employee training and certification requirements have been met; written asbestos removal operating policies and procedures; and verification of having the necessary equipment for asbestos-related work.

The asbestos contractor and other contractors on the job site should ensure that all individuals on site are aware of asbestos abatement activities. Your health, your employees'

health, and your protection from liability all depend on your awareness of the presence of asbestos on a job.

The California Labor Code (section 6501.8) defines **asbestos-related work** as “any activity which by disturbing asbestos-containing construction materials may release asbestos fibers into the air.” The Labor Code further defines asbestos-containing construction material as “any manufactured construction material that contains more than 1/10th of 1.0 percent asbestos by weight.” As suggested by this definition, exposure to asbestos can occur from a number of construction-related operations.

For example:

- While remodeling a home to add a stairway, a contractor who cuts through a ceiling section may encounter sprayed-on asbestos insulation.
- While replacing pipes during a minor renovation, a plumber may be exposed to deteriorated pipe covering that contains asbestos.
- Insulation contractors may be exposed to asbestos fibers when cutting through asbestos (transite) shingle siding to insulate a wall.

23

Whenever any suspect building material is going to be affected by construction activities, whether a renovation or a remodel, that material needs to be either tested for asbestos prior to construction or presumed to be asbestos-containing and handled and disposed of properly.

Asbestos abatement work includes encapsulating, enclosing, and removing asbestos at a site. Workers performing this work may have high potential for exposure to asbestos fibers. Removing asbestos is the only permanent solution to its dangers. However, if the asbestos is intact, enclosing



Asbestos-Related Work

or encapsulating asbestos on site, together with periodic monitoring, may be the best course of action.

Asbestos Certification, C-22 Asbestos Abatement License, and Cal/OSHA (DOSH) Registration

For any work that involves 100 square feet or more surface area of asbestos-containing construction material a contractor must be asbestos certified or licensed and also registered with Cal/OSHA (DOSH). This means that contractors must pass either an Asbestos Certification examination or a C-22 Asbestos Abatement Licensure examination administered by CSLB. In addition, the contractor must be registered with the Asbestos Contractor's Registration Unit of Cal/OSHA's Division of Occupational Safety and Health (DOSH). Applications for DOSH registration must include the following documentation:

- Asbestos certification or C-22 licensure from CSLB for asbestos abatement work
- Health insurance coverage (or a \$500 trust account for each employee)
- Workers' compensation insurance coverage
- Evidence that all employees are trained and certified in asbestos-related abatement work as required by state and federal regulations
- Written asbestos removal operating policies and procedures
- Verification that the contractor has the necessary equipment to safely perform asbestos-related work

The penalties are stiff if a contractor performs asbestos-related work of 100 square feet or more without CSLB certification/licensure and DOSH registration.



Exception – A contractor does not have to be asbestos certified/licensed or DOSH registered to install, repair, maintain, or perform nondestructive removal of asbestos cement pipe used outside of buildings. This is not considered asbestos-related work if the work operations do not result in employees exceeding the Permissible Exposure Limit (PEL) of 0.1 fibers per cubic centimeter of air (f/cc) as an 8-hour time-weighted average. However, the employees and supervisors involved in the work operations must be trained and certified by an asbestos cement pipe training program approved by DOSH (Title 8, California Code of Regulations, section 1529(r)).

Uncertified / Unlicensed Contractors

If the removal of asbestos-containing materials involves less than 100 square feet of surface area, CSLB does not require asbestos certification/licensure and DOSH does not require registration. However, because the contractor is still doing asbestos-related work they must file a CARCINOGEN ‘REPORT OF USE’ form, both electronically via email and original by U.S. mail, with the Occupational Carcinogen Control Unit of DOSH **and** file a TEMPORARY WORKSITE NOTIFICATION form with the nearest DOSH district office. Also, the contractor (and anyone else involved in the project) must complete 40 hours of asbestos training provided by a DOSH-approved asbestos trainer. In addition, the Cal/OSHA worker protection rules (Title 8, California Code of Regulations, section 1529) and all federal, state, and local regulations must be followed.

25

Bids – A licensed contractor who is not asbestos certified/licensed may **bid** on a project involving asbestos-related work of 100 square feet or more of surface area if the asbestos-related work is subcontracted to a contractor who is properly asbestos-certified or licensed by CSLB and registered with DOSH. For a list of contractors registered to perform



Asbestos-Related Work

asbestos-related work and for additional information, contact the Asbestos Contractors' Registration Unit (ACRU) at:

ACRU-DOSH

P.O. Box 420603,
San Francisco, CA 94142
(916) 574-2993 Fax (916) 483-0572
ACRU@dir.ca.gov
www.dir.ca.gov

Fines and Penalties – A contractor who engages in asbestos-related abatement work of 100 square feet or more surface area of asbestos-containing materials without CSLB certification/licensure and DOSH registration is subject to one of the following fines and penalties by CSLB:

- 26
- For a first offense conviction, the fine is between \$1,000 and \$3,000 and may include license revocation or suspension (Business and Professions Code section 7028.1(a)).
 - For conviction of a subsequent offense, the fine is between \$3,000 and \$5,000 or possible imprisonment in county jail for up to one year, or both, as well as license suspension or revocation (Business and Professions Code section 7028.1(b)).

Note: Other agencies (federal, state, or local) may impose additional fines and penalties for violations during asbestos abatement or asbestos disturbance and disposal from other activities.

Accreditation for Public and Private Schools

The Asbestos Hazard Emergency Response Act (AHERA) (Title II of the Toxic Substance Control Act), requires local education agencies to use accredited persons to perform the following asbestos-related tasks:

1



- Inspect for asbestos-containing materials in buildings
- Prepare management plans concerning the presence of asbestos-containing materials
- Design and draft specifications for asbestos abatement projects
- Supervise and conduct the abatement work

Personnel involved in asbestos-related work in private and public schools (grades K-12) must attend and pass an approved DOSH training course that is EPA-accredited. Approved trainers and courses can be located at:

www.dir.ca.gov/dosh/asbestostraining.html. There are separate accreditation courses for inspectors, management planners, project designers, asbestos abatement contractors and supervisors, and for asbestos abatement workers. You are only allowed to work in your accredited areas.

27

Fines and Penalties – Abatement work in schools must be done by persons trained in DOSH approved EPA-accredited courses. Persons who violate these regulations are subject to a fine, and criminal penalties may also be assessed if the violation is knowing and willful. Contractors who improperly remove asbestos from schools can be liable under both EPA AHERA and National Emissions Standards for Hazardous Air Pollutants (NESHAP).

NESHAP Regulations

The Clean Air Act of 1970 required the EPA to develop and enforce regulations to protect the general public from exposure to hazardous air pollutants. In response, the EPA established National Emission Standards for Hazardous Air Pollutants (NESHAP). Because of its inherent health risks, asbestos was one of the first hazardous air pollutants regulated. NESHAP jurisdiction includes all facilities, including but not limited to



Asbestos-Related Work

structures, installations, and buildings other than residential dwellings that have four or fewer units. In California, the Air Resources Board (CARB) and delegated local air districts enforce asbestos NESHAP regulations. Contractors should contact the local authority for the project to understand local requirements.

NESHAP Notification Requirement – Any demolition project must provide notification of planned work to EPA or delegated air pollution authority. Demolition work must not begin until 10 working days after notification of the planned project is made to EPA or delegated air pollution authority. This notice is required even if there is no asbestos or the asbestos has been removed. NESHAP defines demolition as, the “means of 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.”

Work Practices to Follow Under NESHAP – The following work practices should be adhered to for demolition or renovation of any structures, installations, and buildings involving asbestos-containing material except residential buildings that have four or fewer dwelling units:

The contractor should adhere to the following work practices for demolition or renovation of any structures, installations, and buildings involving asbestos-containing material.

- Notify EPA and CARB (or local air district) to get information about survey requirements and to express intent to demolish or renovate.
- Remove all asbestos-containing material from the facility being demolished or renovated **before** any disruptive activity begins or before access to the material is obstructed.
- Keep asbestos-containing material adequately wet before, during, and after removal.

- Conduct demolition or renovation activities in a manner that produces no visible emissions to the outside air.
- Handle and dispose of all asbestos-containing material by placing in leak-tight containers with warning labels and transport to a state-approved waste disposal site.

While NESHAP does not require following these work practices for residential buildings that have four or fewer dwelling units, the contractor should check with local air quality management or air pollution control districts, as some may have requirements for these buildings.

NESHAP rules are in addition to Cal/OSHA regulations and any local air quality district restrictions.

Fines and Penalties – A contractor who engages in asbestos abatement work in a facility under NESHAP jurisdiction without certification/licensure or in violation of NESHAP work practice standards is subject to the following fines and penalties:

- Fines assessed up to \$25,000 per day per violation
- Criminal charges for a “knowing” violation of the law, with a penalty of imprisonment

Below are some examples of violations of EPA NESHAP regulations, as well as local air quality control agencies’ requirements, and CARB:

- Failure to thoroughly inspect for asbestos
- Failure to provide written notification prior to conducting a regulated project or disturbing a regulated quantity of asbestos
- Failure to have a competent person present during the disturbance of asbestos-containing material



Asbestos-Related Work

- Failure to keep asbestos-containing material adequately wet throughout the project until it is sealed in leak-tight containers
- Failure to properly handle asbestos-containing material during removal and disposal
- Failure to properly seal all asbestos waste material in leak-tight containers prior to transporting waste for disposal
- Failure to properly label asbestos waste prior to transporting off site
- Failure to mark asbestos waste material transport vehicles with asbestos warning signs during loading and unloading of waste
- Failure to properly dispose of asbestos waste material
- Failure to properly maintain asbestos waste removal records

Comparison of NESHAP to Cal/OSHA (DOSH) and CSLB –

Table 7 provides a comparison of the practice standards for Cal/OSHA, NESHAP, and CSLB. Notice that Cal/OSHA's standards are more rigorous than those of NESHAP and CSLB, although the penalties for violations of NESHAP standards are the strictest. It also is important to note that local air quality districts may have regulations more stringent than Cal/OSHA's.

**TABLE 7: COMPARISON OF NESHAP TO CAL/OSHA (DOSH)
AND CSLB REGULATIONS**

	NESHAP PRACTICE STANDARDS	CAL/OSHA PRACTICE STANDARDS	CSLB/ CONTRACTORS LICENSE LAW
Asbestos-Containing Material	More than 1%	Registration required for any concentration above 0.1% Surface area: 100 square feet or more	Surface area: 100 square feet or more
Facility	Demolition or renovation of all structures, installations, and buildings, excluding residential buildings that have four or fewer dwelling units	All structures and buildings, including all residential buildings	Construction or alteration of any building, highway, road, parking facility, railroad, excavation, or other structure in California requires a contractor license if the total cost (labor and materials) of one or more contracts on the project is \$500 or more
Removal of Asbestos-Containing Material	Surface area: 160 square feet or more Pipe: 260 linear feet	>1%: Class of work trigger—any amount can trigger some work practice rules	Surface area: 100 square feet or more
Monitoring of Air	None	PEL and excursion limit	None
Wetting Requirement	Adequately wet and no visible dust	Visibly wet (as determined by Cal/OSHA inspector)	None

**TABLE 7: COMPARISON OF NESHAP TO CAL/OSHA (DOSH)
AND CSLB REGULATIONS (CONTINUED)**

	NESHAP PRACTICE STANDARDS	CAL/OSHA PRACTICE STANDARDS	CSLB/ CONTRACTORS LICENSE LAW
Fines and Penalties	Civil penalties: up to \$25,000 per day per violation Criminal penalties: prison terms for a knowing violation	First conviction: up to \$3,000 fine, or both fine and revocation, or suspension of license Subsequent: up to \$5,000 fine, imprisonment, or both fine and imprisonment, and revocation of license	First conviction: Fine of up to \$3,000, possible revocation or suspension of the contractor's license Subsequent: Fine of not less than \$3,000 or more than \$5,000, or imprisonment in county jail up to one year, or both fine and imprisonment, and mandatory license suspension or revocation.

32

Governing Laws

These laws are designed to protect the health of the contractor, the employees, and the public who might be exposed to asbestos fibers by someone who is not trained or equipped for proper asbestos abatement. For the most up-to-date information on the law, contact the appropriate agency listed in the “Resources” section of this booklet, starting on page 43.

California laws governing contractors who work with asbestos:
Tables 8–12 display the section and topic of California laws that pertain to asbestos-related work.

TABLE 8: BUSINESS AND PROFESSIONS CODE, CONTRACTORS LICENSE LAW

SECTION	TOPIC
7028.1	Fines and penalties for performing asbestos-related work by licensed or unlicensed contractor who is not asbestos certified/licensed
7058.5	Outlines when asbestos certification is needed; requires all contractors to complete open book examination on asbestos-related work
7058.6	Requires registration of asbestos contractor with Division of Occupational Safety and Health (DOSH)
7058.8	CSLB shall provide to public, upon request, a current list of certified and DOSH-registered asbestos contractors
7099.11	Penalties and fines for contractors who falsely or incorrectly advertise asbestos-related work
7118.5	Penalties and fines for contracting with an uncertified contractor for asbestos-related work
7180	Asbestos consultants and site surveillance technicians shall be certified by DOSH
7181	Defines scope of work practice for asbestos consultant: building inspections, abatement project design, contract administration, supervisor of site surveillance technicians, sample collections, preparation of asbestos management plans, and clearance air monitoring
7182	Defines scope of practice for site surveillance technician: Independent on-site representative of asbestos consultant who monitors the asbestos abatement activities of others, provides asbestos air monitoring services for area and personnel samples, performs building surveys and contract administration at the directions of the asbestos consultant
7183	Sets time limits for DOSH to accept or reject applications for asbestos consultant or site surveillance technicians
7183.5	DOSH enforces and revokes certification for asbestos consultant or site surveillance technician
7184	Asbestos consultant requirements for DOSH certification
7185	Site surveillance technician requirements for DOSH certification
7187	Asbestos consultant or site surveillance technician conflicts of interest with asbestos abatement contractor
7189	Penalties for uncertified practice as an asbestos consultant or site surveillance technician
7189.5	Defines asbestos abatement projects as 100 square feet or more of surface area of asbestos-containing material
7189.7	Allows certified state employees to perform asbestos consultant or site surveillance technician work for agencies of the state

Asbestos-Related Work

TABLE 9: LABOR CODE, DIVISION 5

SECTION	TOPIC
6325.5	If DOSH believes workplace contains friable asbestos and protection for employees is inadequate, DOSH may issue an order prohibiting use
6436	Outlines who may bring a criminal complaint for asbestos-related work violations; disposition of penalties
6501.5	Establishes registration requirements for asbestos-related work employers or contractors
6501.7	Defines asbestos
6501.8	Defines asbestos-related work and asbestos-containing construction materials; identifies exceptions
6501.9	Requires good-faith effort to determine presence of asbestos before beginning construction work
6503.5	Guidelines for safety conference prior to handling asbestos
6505.5	Penalties for failure to determine presence of asbestos
6508.5	All public entities involved in asbestos-related work must be registered with DOSH
6509.5	Contains provisions regarding asbestos consultant inspection and related corrective work as a condition for loan or permit; includes penalties and fines
9004	Identifies asbestos as a carcinogen
9021.5	Establishes asbestos consultants and site surveillance technicians shall be certified by DOSH
9021.6	Gives DOSH permission to charge an application fee for certification of asbestos consultant and site surveillance technician
9021.8	Establishes requirements for annual renewal of asbestos consultant and site surveillance technician certification
9021.9	Establishes an advisory committee to develop content for task-specific training program for employees and supervisors; authorizes fee for training
9040	Requires employers to provide regular medical exam for employees

TABLE 10: HEALTH AND SAFETY CODE

SECTION	TOPIC
19827.5	Local agencies may not issue permits to demolish until the applicant has demonstrated exemption from or compliance with notification requirements of NESHAP
25143.7	Guidelines for disposal of asbestos at landfill sites
25914.2	Guidelines for contracts regarding asbestos-related work; continuance of work in unaffected areas; emergency conditions
25914.3	Provision for uncertified contractor to bid on a project involving asbestos-related work

TABLE 11: CALIFORNIA CODE OF REGULATIONS, TITLE 8

SECTION	TOPIC
341.6	Establishes DOSH asbestos-related work registration requirement for work of 100 square feet or more surface area of asbestos-containing material; registration valid for one year; contains definitions
341.7	Outlines DOSH requirements for registration to perform asbestos-related work; renewal provisions
341.9	Establishes DOSH notification requirements to perform asbestos-related work
341.10	Establishes guidelines for postings and notifications related to asbestos work
341.11	Establishes procedures for safety conference before starting asbestos-related work
341.13- 341.14	Outlines conditions under which a DOSH registration may be revoked, denied, or suspended
1529	Establishes procedures and guidelines for asbestos-related work; contains definitions
5208	Establishes procedures for asbestos-related work for non-construction trades and for construction-related spraying of asbestos-containing materials

35

TABLE 12: CALIFORNIA CODE OF REGULATIONS, TITLE 16

SECTION	TOPIC
832.22	Establishes C-22 asbestos abatement contractor specialty classification and requirements, including DOSH registration
833	Sets forth C-22 classification and certification limitations and examination requirements

Guidelines for Handling Asbestos



Introduction

The following discussion is intended to provide **general** information about proper asbestos-related work practices for all licensed contractors. **If you will be working with asbestos directly, you should obtain further information, training, and certification/licensure.** There is more to know about asbestos-related work than can be covered in this booklet. Contact your trade association, insurance company, Cal/OSHA (DOSH), Federal OSHA, and EPA for further information.

Identifying Asbestos

36

While it is possible to “suspect” that a material contains asbestos by visual inspection, actual determinations can only be made by laboratory analysis. Stop work in the area immediately. A certified industrial hygienist, certified in the practice of industrial hygiene by the American Board of Industrial Hygiene; an asbestos consultant certified by DOSH, or a contractor who has completed AHERA inspector training must sample any presumed asbestos-containing material. If the results reveal the presence of asbestos one of these individuals must monitor the air to determine the concentration of airborne asbestos fibers.

Until the material is tested, the contractor should assume that the product contains asbestos unless the label or the manufacturer verifies that it does not. The EPA requires that the asbestos content of suspect material be determined by collecting bulk samples and analyzing the samples by polarized light microscopy (PLM). The PLM technique determines both the percentage and type of asbestos in the sampled material. Contact a regulatory agency such as Federal OSHA or Cal/OSHA (DOSH) for a list of testing laboratories.



Building records may indicate the presence of asbestos on a site, but these records are often inaccurate and should not be used as a substitute for professional advice. However, schools are required to identify the location of all building and construction material that contain asbestos and must make this information available to the public.

Determining the Presence of Asbestos – The owner, general contractor, or contractor must determine whether asbestos is present before work begins on a project. The general contractor or contractor must always presume that asbestos is present in any building or structure unless the owner can produce proof that materials are asbestos-free. The owner's response should be documented. The property owner, general contractor, or contractor must perform due diligence to prove the presence or absence of asbestos before disturbing suspect building materials on any building or structure built at any time.

37

Fines and Penalties – According to the Labor Code (section 6505.5), a contractor who begins asbestos-related work without first determining if asbestos-containing material is present may be subject to one of the following penalties:

- A fine up to \$5,000 or up to six months in county jail, or both, for a knowing or negligent violation
- A fine of up to \$10,000 or up to one year in county jail, or both, for a willful violation that results in death, serious injury or illness, or serious exposure and a subsequent willful violation may be punishable by a fine up to \$20,000 or by up to one year in county jail, or both
- A civil penalty up to \$2,000 for each violation
- A civil penalty up to \$20,000 for each willful or repeat violation

Federal and State Asbestos Standards for the Construction Industry

Industry – Most workers and contractors in California fall under the jurisdiction of the federal OSHA Standard, Asbestos Standard for the Construction Industry, and Title 8 of the California Code of Regulations, section 1529 (Cal/OSHA). These standards describe the methods used to sample, test, or remove asbestos-containing materials, and explain the documentation procedures necessary when working with asbestos-containing materials. Even if the contractor is working with less than 100 square feet of surface area of asbestos-containing material, they must still follow the provisions of Cal/OSHA and the federal standard.

Asbestos Training Requirements

All asbestos work site employers are responsible for training employees about asbestos and for providing them with health insurance to cover the entire cost of medical examinations and monitoring required by law. Federal and state regulations require an employer, at no cost to the employee, to institute a training program for all employees likely to be exposed to asbestos in excess of the permissible exposure limit, and for all employees who perform Class I through Class IV asbestos operations. The employer also must ensure employee participation in the training program. Contact federal OSHA or Cal/OSHA for information regarding what must be covered in the training program.

Asbestos Abatement Work

Asbestos-abatement work includes encapsulating, enclosing, and removing asbestos at a site. Workers performing this work may have high potential for exposure to asbestos fibers. Removing asbestos is the only permanent solution to its dangers. However, if the asbestos is intact, enclosing

Guidelines for Handling Asbestos

or encapsulating asbestos on site, together with periodic monitoring, may be the best course of action.

Improper removal of asbestos-containing material can create a dangerous situation where little or no risk previously existed.

A safety conference must be held before the start of work on all asbestos-handling jobs. The conference must include:

- Representatives of the owner of the contracting agency
- Employer/Contractor
- Employees
- Employee representatives

Such a conference must include a discussion of the employer's safety program and safe work practices.



Summary

As mentioned previously, the contractor must make every attempt to find out if asbestos is present on a site before beginning work. Otherwise, they run the risk of criminal prosecution if asbestos-related work is done without proper CSLB certification/licensure and DOSH registration. If the contractor does not obtain necessary certification/licensure and registration and/or does not follow proper abatement procedures, they may also be in violation of laws that regulate asbestos exposure and risk lawsuits stemming from claims of negligence.

Note that federal OSHA regulations require a pre-job site assessment for general health and safety hazards, including asbestos. It is in the contractor's best interest to document this assessment and any other efforts to determine the presence of asbestos before work begins.

If asbestos is discovered in the middle of a project, stop work in the area immediately! Contact the nearest DOSH district office and EPA, CARB, or local air quality agency for assistance. The contractor may want to obtain the services of a certified industrial hygienist or asbestos consultant to determine the best way to deal with asbestos problems. Sampling of any presumed asbestos-containing material must be done by a certified industrial hygienist, an asbestos consultant certified by DOSH, or a contractor who has completed AHERA inspector training.

If the presence of asbestos is confirmed, steps must be taken to abate the hazard. Remember that no one may do abatement or other asbestos-related work of 100 square feet or more without CSLB asbestos certification/licensure and DOSH registration. **Even in cases where the removal involves**

less than 100 square feet of asbestos, DOSH training and reporting is still required, and Cal/OSHA worker protection rules and all federal, state, and local regulations must be followed! As such, it may be necessary (and most advisable) to subcontract the work to a certified/licensed and DOSH-registered contractor.

If the contractor employs people to work on a site where asbestos is present, they are responsible to inform their employees about asbestos risks, proper work practices, including training, and control measures. If the contractor does not have employees at the job site, they still must ensure they follow proper work practices and control measures to minimize release of asbestos fibers. By fulfilling these responsibilities, everyone's health is protected, and contractors protect themselves against liability.

41

Reporting Incidents of Exposure

DOSH requires that employers notify any employee exposed to asbestos above the permissible exposure limit (PEL) within five days of the discovery that the exposure has occurred. A report must also be made to the nearest DOSH district office within 15 days of the known exposure. Cal/OSHA (DOSH) requires that employees must be notified in writing as soon as possible of the results of monitoring, either individually or by posting in an accessible place.

Contract Protection

To protect against the costs and damages associated with delays if asbestos is discovered after work is already in progress, the contractor should include a “changes and extras” clause in any contract for repair and renovation of existing facilities. Such a clause should notify owners of their obligation to determine if the structure contains asbestos.



Summary

The clause should provide for increased compensation and an increase in time for completion if physical conditions at the site are different from those described in the plans and specifications. Any new conditions, such as asbestos discovered mid-project, would then trigger a “claim” or “extra” negotiation between the contractor and the owner. Without such a clause, the contractor should increase the initial bid to cover unforeseen hazards or additional work that may only be discovered once work begins; otherwise the contractor runs the risk of paying for any such additional work.



Resources

Environmental Protection Agency

Region 9 Environmental Public Information Center
415.947.8000 or 866.372.9378
www.epa.gov/ca

Cal/OSHA

Division of Occupational Safety and Health (DOSH)
Asbestos and Carcinogen Unit
916.574.2993
www.dir.ca.gov/DOSH/asbestos.html

DOSH – Asbestos Contractors' Registration Unit
916.574.2993
www.dir.ca.gov/dosh/ACRU/ACRUhome.htm

43

Contacts for Lists of Qualified Help in Asbestos-Related Work

American Industrial Hygiene Association
703.849.8888
www.aiha.org

National Institute for Standards and Technology
301.975.2000
www.nist.gov

National Institute for Occupational Safety and Health
(NIOSH)
800.232.4636
www.cdc.gov/NIOSH



Resources

Asbestos Consultant Certification and
Trainer Approval Unit
916.574.2993
www.dir.ca.gov

Contractors State License Board (CSLB)
800.321.2752
www.cslb.ca.gov

Additional Training

Cal/OSHA website listing all certified training providers
www.dir.ca.gov/databases/doshcaccsst/DOSHApprovedTrainingCoursesProviders.pdf

Health Issues

44

American Lung Association
800.586.4872
www.lung.org

Consumer Product Safety Commission
800.638.2772
www.cpsc.gov

Disposal Procedures

California Department of Toxic Substances Control
800.728-6942
www.dtsc.ca.gov

Department of Resources Recycling and Recovery
Waste Permitting, Compliance, and Mitigation Division
916.341.6360
www.calrecycle.ca.gov



Air Quality

California Air Resources Board (CARB)

800.242.4450

www.arb.ca.gov

Local Air District Directory:

www.arb.ca.gov/capcoa/roster.htm

Miscellaneous

Toxic Substances Control Act

202.554.1404

www.epa.gov

Asbestos Open Book Exam



Please use the answer sheet to record your answers on page 53.

- 46
1. According to Cal/OSHA regulations, in cases where there is **less** than 100 square feet of asbestos material, which of the following requirements must an uncertified, non-C-22 contractor complete before performing any asbestos-related work?
 - a. CSLB certification and DOSH registration
 - b. DOSH notification and Cal/OSHA training
 - c. Cal/OSHA training and DOSH registration
 - d. CSLB certification and Cal/OSHA training
 2. Before performing asbestos abatement that involves 100 square feet or **more**, what must a contractor have?
 - a. CSLB certification/licensure and DOSH registration
 - b. DOSH registration and a completed EPA notification
 - c. EPA certification and a completed CSLB notification
 - d. EPA registration and a completed NIOSH notification
 3. How many years will it usually take before asbestos-related disease appears?
 - a. 1–5 years
 - b. 6–10 years
 - c. 10–30 years
 - d. 40–50 years

Asbestos Open Book Exam

4. Which of the following asbestos products is most easily damaged by vibration and impact?
 - a. Roofing shingles
 - b. Floor tile
 - c. Pre-molded pipe coverings
 - d. Sprayed-on insulation and acoustical products
5. What agency does the contractor have to notify if performing a demolition or renovation job where regulated quantities of asbestos are to be removed on a building?
 - a. NESHAP (EPA)
 - b. DOSH
 - c. CSLB
 - d. CDPH
6. If a smoker and a non-smoker are both heavily exposed to asbestos, how much more likely is the smoker compared to the non-smoker to develop lung cancer?
 - a. 10 to 15 times more likely
 - b. 15 to 30 times more likely
 - c. 20 to 40 times more likely
 - d. 30 to 90 times more likely

47

Asbestos Open Book Exam

7. Which of the following deadly cancers may occur from relatively light exposure to asbestos?
- Asbestosis
 - Lung cancer
 - Stomach cancer
 - Mesothelioma
8. An uncertified, non-C-22 contractor who is cited by CSLB for engaging in asbestos-related work of more than 100 square feet may receive which of the following fines for the first offense?
- \$1,000 to \$3,000
 - \$3,000 to \$5,000
 - \$10,000 to \$20,000 for each violation
 - \$25,000 per day per violation
9. If removing **less** than 100 square feet of asbestos-containing materials on a job, what agency does the contractor need to notify?
- DOSH
 - Local Air Quality District
 - NESHAP (EPA)
 - CSLB

Asbestos Open Book Exam

10. While each asbestos encounter is handled on a case-by-case basis, when possible, which of the following is the preferred method for dealing with an asbestos-related problem?

- a. Removal
- b. Enclosure
- c. Encapsulation
- d. Encasing

11. Which of the following agencies have regulations that are often more strict than Cal/OSHA regulations?

- a. EPA
- b. CSLB
- c. Local air district
- d. Department of Occupational Safety and Health

49

12. Although each asbestos project is different, when possible, the preferred method for abating asbestos-containing materials is encasement.

TRUE

FALSE

13. The asbestos contractor must provide a copy of his or her Cal/OSHA (DOSH) registration to the prime/general contractor and any other employers at the site before the commencement of any asbestos-related work.

TRUE

FALSE

Asbestos Open Book Exam

14. Asbestosis is a serious, chronic, non-cancerous respiratory disease that occurs when asbestos fibers become lodged in the lungs.

TRUE

FALSE

15. Exposure to asbestos is thought to result in cancers of the esophagus, larynx, stomach, colon, rectum, and gastrointestinal tract.

TRUE

FALSE

16. EPA has banned all asbestos-containing products since 1990.

50

TRUE

FALSE

17. Friable asbestos-containing material should be handled as hazardous material.

TRUE

FALSE

18. Contractors cited for violations by EPA can be assessed for civil penalties of up to \$25,000 per day per violation.

TRUE

FALSE

Asbestos Open Book Exam

- 1
19. Asbestos-containing material enclosed in a labeled airtight bag can be disposed of in a public dumpster.

TRUE

FALSE

20. Buildings scheduled for renovation constructed after 1980 do not need to be tested for asbestos.

TRUE

FALSE



Verification Form

IMPORTANT:

1. Complete the open book examination using the answer sheets on the other side of this page.
 2. Sign this page as noted.
- 3. Tear out pages 52-55 and submit them with your bond and fee notice.**

I understand that the Open Book Examination is required to be completed and submitted with my bond and fee. **I further understand that this Open Book Examination does NOT certify me to engage in asbestos-related work pursuant to section 7058.5 of the Business and Professions Code, nor license me to do so pursuant to Title 16, California Code of Regulations, section 832.22.**

52

APPLICANT/LICENSEE SIGNATURE (SIGNATURE OF OWNER, PARTNER, OR OFFICER)

PRINT APPLICANT/LICENSEE NAME

QUALIFIER'S SIGNATURE (SIGNATURE OF RME/RMO OR QUALIFYING PARTNER)

PRINT QUALIFIER'S NAME

QUALIFIER'S SIGNATURE (SIGNATURE OF RME/RMO FOR ADDITIONAL CLASSIFICATIONS)

PRINT QUALIFIER'S NAME



Answer Sheet



Circle the letter that corresponds to the choice that best completes questions 1 through 11.

1. a b c d

2. a b c d

3. a b c d

4. a b c d

53

5. a b c d

6. a b c d

7. a b c d

8. a b c d

9. a b c d

10. a b c d

11. a b c d

Answer Sheet

Circle T (true) or F (false) for questions 12 through 20.

12. T F

13. T F

14. T F

15. T F

16. T F

54

17. T F

18. T F

19. T F

20. T F

Answers

1. b 13. T

2. a 14. T

3. c 15. T

4. d 16. F

5. a 17. T

6. d 18. T

55

7. d 19. F

8. a 20. F

9. a

10. a

11. c

12. F



CONTRACTORS STATE LICENSE BOARD

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www.cslb.ca.gov
www.CheckTheLicenseFirst.com

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