

E Light Electric Services, Inc.
Health, Environmental, and Safety Program
Asbestos Awareness

Purpose

The purpose of this program is to provide E Light Electric Services (E Light) employees an awareness of asbestos hazards and asbestos-containing building materials (ACBMs) that may be encountered during the course of work with E Light, and establish guidelines to protect employees, contractors, visitors and vendors at E Light's worksites from exposure to airborne asbestos fibers when ACBMs are known to be present.

Scope

With the understanding that any structure built prior to 1985 may have, inside a building assembly or a building component, an asbestos-containing product. This awareness program applies to all E Light employees who may be performing work in older buildings, be it routine or non-routine work. Whereas some ACBMs may be known, others may be unknown, especially in the older structures. Therefore, E Light employees performing work in these older structures must be aware that they may encounter previously known and/or unknown ACBMs.

This awareness program applies to the following:

- E Light's employees whose tasks involve working at locations where ACBMs are known or suspected to be present (e.g., older buildings),
- Employees of E Light's subcontractors whose tasks involve working at locations where ACBMs are known to be present.

Hazardous Materials Policy

It is E Light's policy that only qualified employees should perform tasks with known hazardous materials, and asbestos is a known hazardous material. That said, E Light's employees are **not** qualified to repair, remove, encapsulate, enclose, or otherwise disturb a known ACBM. Those tasks shall be performed by a specialty HazMat-licensed contractor.

Where E Light's employees are present near activities where a hazardous substance is disturbed or released, they must be protected from exposure by isolating the work-area, re-scheduling E Light's work and/or controlling access to areas affected by the adjacent activity.

Moreover, if E Light employees perform work in an area that formerly involved a specialty contractor disturbing a hazardous material (e.g., abatement, removal, encapsulation, maintenance, repair, etc.), E Light employees shall perform work only **after** the affected area is determined to be safe (*from HazMat exposure*) for re-occupancy by un-protected workers.

E Light's - Roles and Responsibilities

E Light's Management are responsible for:

- Where E Light performs work in a building constructed prior to 1985, E Light's management shall request that the building owner(s) identify all ACBMs therein that may affect E Light's scope of work, prior to E Light's employees performing work. (*NOTE – Building owners should have had an AHERA-qualified Building Inspector-Management*

Planner identify, sample, characterize, map, and label all known ACBMs), and

- Communicating annually to E Light employees performing work in said buildings, the information in each asbestos inspection report including all updates to reported information regarding changed conditions.
- Coordinating with building owners and other contractors (on multi-employer worksites) to ensure that E Light employees are not exposed to asbestos hazards when ACBMs are present.
- Ensuring that E Light employees, performing work in buildings constructed prior to 1985, are fully informed of possible asbestos hazards for each applicable worksite prior to employees performing work – with the understanding that not all areas of the same building with ACBMs, may have ACBMs.
- Communicating annually this asbestos awareness program to affected E Light employees.

E Light's Project Supervisors (Managers and Foremen) are responsible for:

- Communicating information to employees regarding building materials known to be hazardous or harmful, e.g., asbestos.
- When performing work in buildings constructed prior to 1985, providing effective on-site observations of known ACBMS and keeping vigilant for unknown, unseen, and/or uncharacterized suspect building material that could contain asbestos.
- Notifying E Light's Director of Education and Loss Prevention upon discovering an unknown or suspect building material that may contain asbestos and assisting in collecting a sample of the material (for testing) if warranted.
- Implementing engineering controls when a task generates or is anticipated to generate, significant residue or airborne dust.
- Developing the sequence and schedule of work that meets the project scope while ensuring that E Light's employees are not exposed to asbestos when conducting their work and responding to employee observations of damage or suspect materials.
- Ensuring that work sites with ACBMs are safe for occupancy by E Light workers and walking the worksite daily checking for changed conditions.

E Light's Employees are responsible for:

- Minimizing exposure to airborne construction dust by performing their tasks in a manner that controls the dust and protecting and not disturbing a known or suspect ACBM.
- Reporting to project supervision observations of a damaged or deteriorating ACBM affecting the work area.
- Staying clear of any asbestos-abatement activity, or any activity performed by a specialty contractor involving a hazardous material.

Asbestos Hazards in Construction Tasks

Asbestos is a common, naturally occurring, group of fibrous earthen minerals that, for decades, were incorporated into a variety of building materials for increased strength, durability, or fire-resistance. This group of minerals contains several types of asbestos used in building products - the most common: Chrysotile, then: Amosite and Crocidolite, and much less common is: Actinolite and Tremolite. **Asbestos was commonly included in pipe insulation, cement pipe, fire-doors, brake/clutch pads, textured plasters, sprayed-on structural fireproofing, flooring products, roof sheeting/mastics, wire insulation, and many other building products.**



Some asbestos-containing building materials (ACBMs) are hard, durable, and cementitious, and the asbestos therein is tightly bound within the matrix of the product. Whereas other ACBMs are light-weight and porous (e.g., insulation and fireproofing) and can be easily crumbled with hand-pressure.

By regulation, an ACBM is defined as a building material containing greater than 1% asbestos by weight. If the material contains less than 1% asbestos, it is not regulated. However, dust from a building material containing any amount of asbestos may be harmful if inhaled.



A “friable” ACBM is a material that can be easily crumbled by hand-pressure. Friable ACBMs represent a higher risk of worker exposure (than non-friable ACBMs) because they more-easily release airborne asbestos fibers when damaged or disturbed. That said, even a hard and durable ACBM can become weak and “friable” due to age, if it becomes water-damaged, or it is damaged due to mechanical abrasion (e.g., drilling, grinding, cutting, abrading, etc.).



Whereas there is insufficient evidence that a brief short-term exposure to asbestos is harmful, frequent and/or long-term exposure to airborne asbestos fibers has been shown to cause chronic lung disease - asbestosis, and possibly cancer – mesothelioma.

Controlling Construction Dust and Possible Asbestos Exposure

It should be understood that trace amounts (i.e., less than 1% by weight) of asbestos minerals may be present in some concrete/plaster aggregate, insulation blocks, and some floor and roofing products – with a higher probability of being present in older buildings than newer buildings. *Asbestos in trace amounts requires laboratory analysis by an electron microscope to detect, which is beyond the scope of this awareness program.*

Given that asbestos is an earthen mineral and often found with hard rock, and many building materials have (as a component) aggregates made from hard rock, trace amounts of asbestos should be anticipated in some building materials. It should be also noted that most aggregate quarries routinely test components in their rock, turned aggregate, and keep the content of

fibrous minerals to less than 1% by weight ... but don't assume it is 0%!

Likewise, most aggregates contain silica, and some aggregates have significant concentrations of quartz-silica. Silica, like asbestos, is harmful if asbestos-dust or silica-dust is airborne and is inhaled by workers. Construction dust generated when an aggregate is disturbed or abraded by sawing, cutting, coring, drilling, etc., should be controlled when reasonably practical to do so. Depending upon the building material being abraded, construction dust may also include substances like fiberglass fibers, caustic cement, wood-treatment chemicals, metals (lead, zinc, iron) - all of which can also be harmful to workers. To control worker exposure to airborne construction dust, E Light's site supervision is responsible for implementing engineering controls when a task generates, or is anticipated to generate, significant residue or airborne dust.

This said, E Light's engineering controls to mitigate construction dust, may from time-to-time have trace residues of asbestos and silica minerals in vacuum filters and dustbins. Regulations allow for trace residues (asbestos, silica, metals, etc.) in common and typical construction waste, and it can be disposed of as common solid waste with other construction materials if the dust is contained in a sealed, plastic bag.

Engineering Controls

To minimize worker's exposure to airborne construction dust, E Light will implement controls.

When E Light's scope of work involves tasks that generate dust, where reasonable and practical, engineering controls to mitigate worker exposure will be implemented. When trenching in soil, water misting is often a preferred method as long as the air temperature remains above 32°F. When creating dust from abrading a dry building material, one that may contain trace amounts of a harmful substance, control methods may include one or a combination of:

- **Wet Methods** – For example: Misting with water when trenching or using concrete saws with water misters attached. *NOTE: Some wet methods will need to include wet vacuums to collect residues before the residue can dry and become airborne dust.*
- **Dry Methods** – Using vacuums and power-tools with vacuum-shrouds to collect the dust and residue at the point it is generated. This should be E Light's preferred method when circumstances allow it.
- **Engineered Ventilation** – Using filtered fan assemblies (air scrubbers) and flexible ducting to control the flow of air and dust in a work area.
- **Mini-enclosures** – Isolated work areas often coupled with ventilation to control the flow of air and dust.

In addition to implementing engineering controls to mitigate airborne dust, **prohibited activities** would include:

- Dry sweeping and/or dusting
- Using compressed air or blowers to blow residues from abraded building materials from one location to another.

E Light's site supervision is responsible for the means and methods used by E Light's employees to perform work. Moreover, E Light's employees and crafts are equally responsible for minimizing exposure to airborne construction dust by performing their tasks in a manner that controls the dust. That said, when engineering controls become ineffective, enhanced worker

protection is warranted, which may involve personal protective equipment (PPE) used and worn in accordance with E Light's PPE safety program.

E Light's Worksites and Locations Where Asbestos is Known to be Present

It is understood that some of E Light's worksites include buildings constructed prior to 1985.

Prior Information on Worksites with ACBMs

Building owners are obligated to provide contractors servicing their buildings all known information pertaining to ACBMs in the area of the building where the contractor's employees will be performing work. Moreover, E Light has a responsibility to ask for, and communicate to employees, potential asbestos hazards present in a building where work is to be performed.

At these locations, and prior to E Light's employees conducting work in an older building, E Light requires, by contract, that the Building Owner (*or General Contractor if E Light is a sub*) provide E Light's Director of Education and Loss Prevention a list of all known and presumed ACMs (also known as "PACMs") in areas where E Light will be performing work.

As part of pre-job information collected on older buildings, if available, copies of asbestos surveys, sampling results, and prepared reports (or inventories) describing the type, condition, and location of ACBMs must be provided to E Light's Director of Education and Loss Prevention, who, in turn, will provide this information to each Project Supervisor at each applicable project. (*With the understanding that some complex older facilities may have and be managing many ACBMs in many locations, and E Light only needs to be concerned with and avoid those ACBMs in the specific location that could affect E Light's scope of work.*)

Based on information provided to E Light, E Light's Project Supervisors are responsible for developing the sequence and schedule of work that meets the scope of the project while ensuring that E Light's employees are not exposed to asbestos when conducting their work.



Identifying an ACBM from a non-ACBM

Where a facility has inspected, sampled, and characterized their ACBMs, they commonly adopt an identification system to alert workers to the presence of asbestos.

Building materials known to contain asbestos may be identified by tags, stickers, pipe labels, signs and/or some other high-visibility means of distinguishing the presence of an asbestos-containing product from other, maybe similar (e.g., pipe insulation), non-asbestos building material. That said, more often than not, small components, such as transite insulation blocks in electrical panels (photo on the right) may not be well identified or known in an inventory.



Warnings may also be identified at the entrance of a specific room or facility structure, e.g., mechanical, utility, boiler-rooms where large amounts of thermal insulation and/or sound-absorbing building materials are often present.



This said, it should be understood that buildings with ACBMs often have building materials that may look or function similar to an ACM but are free of asbestos minerals. E Light employees should, when in doubt, treat similar materials as a presumed-ACM (or PACM) until testing or a competent person confirms the presence, or absence, of asbestos.

Accessing a Room or a Space Where ACBMs are Present:

In some older facilities (built prior to 1985) mechanical-electrical utility rooms, boiler rooms, utility-service shafts/tunnels, and similar locations (where asbestos may be present) are typically secured (i.e., locked) and accessible only to authorized personnel. In these locations, ACBMs are often present and managed, if not thoroughly removed.

Where sprayed-on asbestos-containing fireproofing is present in a building, typically on structural steel and often visible in the space above false ceilings, access to that space should also be restricted to authorized personnel.

When/where E Light employees become “authorized” and must perform tasks in these locations, E Light will conduct project-specific training and task orientations focused on safely performing the scope of work in the space where ACBMs are present. Many buildings effectively manage their ACBMs in-place with encapsulation, enclosures, and management practices that mitigate asbestos fibers from being released, and it is E Light’s responsibility to ensure that Building Owners are providing a safe worksite for E Light’s employees. E Light’s site supervision is responsible for ensuring that spaces with ACBMs present are safe for occupancy by E Light workers, each day, every day, prior to workers conducting work in that location.

Daily Inspections for ACBMs and Changed Conditions

E Light’s site supervision shall be responsible for walking the project site and inspecting work-areas, each day, prior to the start of work to ensure job site conditions are safe and known, and known hazards are identified and communicated to workers.

Should an E Light employee observe a damaged ACBM, or a suspect building material which is not identified and not listed in the building’s asbestos documents, and the employee reasonably suspects the material might be asbestos containing, the employee should stop work and report their observation to an E Light supervisor. The site supervisor can then decide whether work should, or should not, proceed.

Where it is determined that a previously unknown suspect material may be present, site supervision shall promptly notify E Light’s Project Manager or Director of Education and Loss Prevention, and the building owners’ representative if applicable, and report the observation. It is the E Light Project Manager’s responsibility to determine the appropriate action thereafter.

Unknowns – Suspect Building Materials and PACMs

Where there is reasonable doubt regarding the composition of a suspect building material (e.g., lite-weight, porous, friable, or fibrous), that material should be treated as a presumed asbestos-containing material (or PACM) until laboratory analysis demonstrates that the asbestos content is below 1% by weight or non-detected (ND). This is very important for buildings constructed

prior to 1985 that may not have had all building materials therein tested for asbestos content.

The standard-of-care for testing and analysis of a suspect building material includes:

- Collect a small bulk-sample of the material (*larger than a dime, smaller than a golf ball*),
- Place the sample in a sealed plastic bag (*e.g., Ziploc sandwich bag*),
- Place it inside a second sealed plastic bag (*same*), and
- Submit the sample to a qualified laboratory for “PLM analysis methods.”

E Light employees are not qualified to conduct building inspections or characterize (*by laboratory analysis*) any building material in a building. If E Light’s project supervision encounters a suspect building material that (*in their opinion*) warrants testing, they shall stop work and inform E Light’s Project Manager or E Light’s Director of Director of Education and Loss Prevention to determine if the material contains any asbestos, including but not limited to having the building owner collect a bulk-sample of the suspect material prior to continuing work.

When Repairing an ACBM is Needed Prior to Conducting Work

If an E Light employee observes any of the following:

- An ACBM that is in a poor condition,
- An ACBM that could impede the performance of their task, or
- An ACBM that is in need of repair because the employee’s task may disturb or break-apart the material,

the employee should stop work and promptly report their observation to a project supervisor - Best to be cautious than cause a release of dust and asbestos fibers into the workspace. When reported, the supervisor needs to promptly limit worker-access to that location and inform E Light’s Project Manager for guidance regarding further actions.

Specialty Contractors for Asbestos Abatement Work

E Light does not perform asbestos abatement tasks. Asbestos-related work must be performed in accord with requirements established by State regulation where the project is located. Moreover, E Light is not licensed by any State to perform asbestos abatement. Asbestos-related work is contracted-out to 3rd-party firms who specialize in asbestos abatement tasks.

Asbestos abatement specialty contractors must perform their work without exposing others, ensure that cleanup is properly completed, and all asbestos waste is collected and properly disposed of. The contractor, or building owner, is also required to conduct air testing to demonstrate that the worksite can be safely re-occupied by un-protected workers.

Working Nearby Asbestos Abatement Activities:

E Light employees shall not participate in any task involving the clean-up or abatement of a known asbestos-containing material. Asbestos cleanup or abatement tasks shall be done by the building owner and/or a third-party specialty contractor. Access to areas where an asbestos-activity is being performed must be restricted to authorized people only, and that does not include E Light employees. E Light employees are **not** authorized to participate in any abatement task. Moreover, the specialty contractor performing the asbestos activity must post warning signs and implement restrictions to prevent E Light’s employees from accessing the affected area until which time the contractor reports the area is safe to re-occupy.

E Light – Employee Training

E Light employees who may be affected by or work with an asbestos-containing material (ACM) must be trained and must understand this awareness program to perform their tasks without endangering themselves, their co-workers, or other building occupants while working in areas with ACBMs present.

Training Outline

Affected E Light employees must read and understand this Asbestos Awareness Program as part of E Light's new hire orientation. This awareness program covers the following topics:

- Types, properties, and uses of asbestos in building materials,
- Health hazards of being exposed to airborne asbestos and inhaling asbestos fibers,
- Where/when known ACBMs are present and applicable to the project location,
- Ways to recognize asbestos-containing building materials (ACBMs),
- Who to contact to avoid damaging known ACBMs, and
- Methods for controlling construction dust and how to implement engineering controls when/where reasonable to collect and control construction dust which may include trace-quantities of asbestos, silica, or other harmful substances.

Refresher training specific to this awareness program must be provided **annually**.

Only those E Light employees who have completed the annual asbestos awareness training and know and understand the content in this program will be allowed to work in areas known to contain ACBMs.

Subcontractors working with E Light employees, at the same location with known ACBMs, shall ensure that all of their affected employees have also received asbestos awareness training, at least equivalent to E Light's program.

E Light's training shall be coordinated by E light's Director of Education and Loss Prevention and records of training shall be kept for at least 3-yrs and made available to E Light's employees upon request.