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# Introduction

## WHY ASBESTOS IS STILL A THREAT

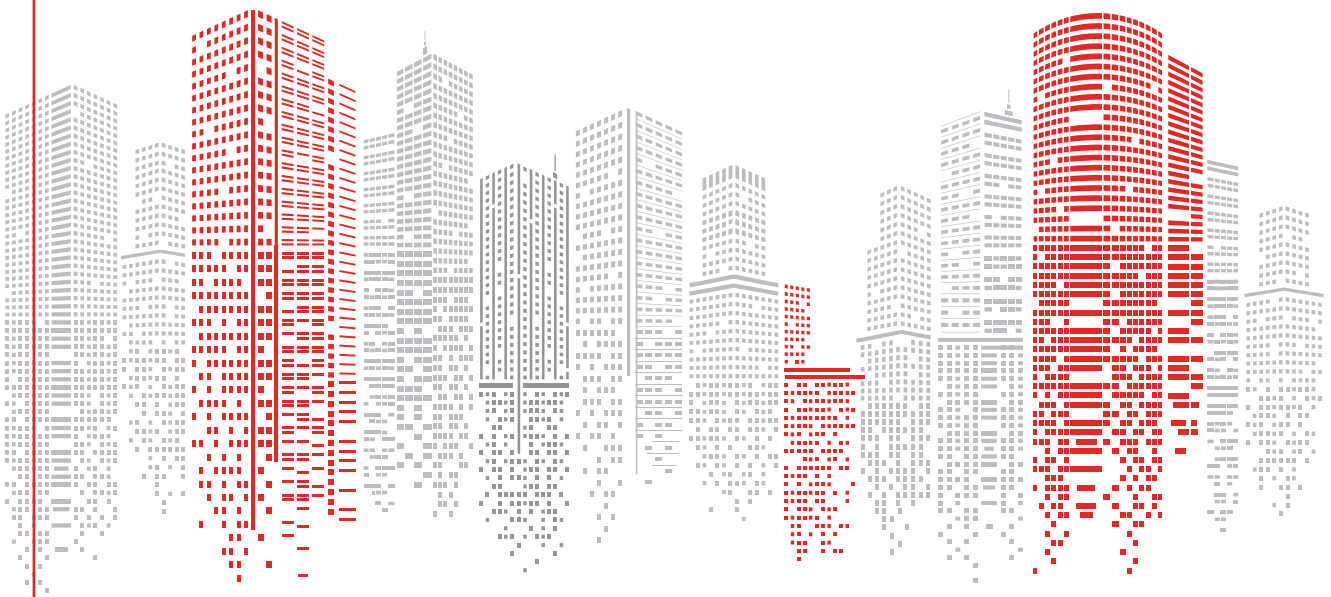
Despite its health risks and multiple bans, asbestos is still present in modern buildings and building materials. Throughout the 1970s and 1980s, laws and regulations were passed to limit exposure and abate and remove it from existing buildings. Though there were also calls to ban this toxic mineral altogether, like the Ban Asbestos in America Act in 2007, numerous building materials still utilize small amounts of asbestos.

In 2018, the Environmental Protection Agency (EPA) announced a Significant New Use Rule (SNUR) regarding asbestos. According to the EPA, the SNUR requires notice to the agency before chemical substances are used in new ways that might create concerns. The majority of these materials are used for construction. In 2019, the EPA issued a final rule to ensure that discontinued asbestos products cannot be reintroduced into commerce without EPA evaluation, putting necessary restrictions and prohibitions on their use.

In many states, it is illegal for anyone to advertise for asbestos removal work unless they are state-certified. The contractor license number and the State/OSHA registration number must be included in any advertising.

Asbestos legislation in the U.S. is riddled with controversy and conflicting interests. It can be hard to understand what asbestos really is and how it should be properly abated. People injured by asbestos have advocated for their rights while working hard to research and implement regulations that protect future workers.

The EPA estimates asbestos products are still present in over **20% of the nation's public and commercial buildings.**



# What is Asbestos?

## TYPES

Asbestos is a parent term for a group of naturally occurring fibrous silicate minerals. Unearthed and mined worldwide, asbestos can be found in large deposits or as a contaminate in other materials such as talc or vermiculite. There are six types of asbestos that fall into two main categories: serpentine and amphibole.

Serpentine fibers are long, flexible, and curved or curly, making them popular in manufacturing. There is only one known type: Chrysotile, also known as “white asbestos.”

Amphibole fibers are straight and stiff with jagged edges, making them brittle and more likely to break. The other five types of asbestos fall under this category: Crocidolite, Amosite, Anthophyllite, Tremolite, and Actinolite.

## USES

Asbestos is abundant in nature, and its fibers are soft, flexible, and very strong, making it resistant to heat, electricity, and corrosion. These qualities make it ideal for insulation and easy to weave within other materials. For these reasons, it was widely used in commercial applications and construction throughout the 20th century until the 1970s. Popular products and materials include:

- Adhesives
- Fireproofing
- Insulation
- Cement sheets
- Construction Mastics
- Electrical Components
- Gaskets
- Vinyl products
- Textiles



Serpentine Asbestos Fibers



Amphibole Asbestos Fibers

# The Risks of Exposure

It is vital to avoid disturbing products or materials that may contain asbestos. When the bundles of asbestos fibers are cracked or disturbed, a person is likely to inhale or ingest the resulting “asbestos dust,” putting the lungs and body at risk. This is a particular risk with friable asbestos (easily crumbled or loose) because it becomes airborne, and it may take 48 to 72 hours for asbestos dust to settle. Once inhaled or ingested, these fibers are permanently trapped inside the body causing a myriad of health issues. To date, there is no known way to reverse the damages it causes.

## WHO IS AT RISK?

Due to its heat-resistance and insulating properties, one is more likely to come in contact with asbestos fibers when handling roofing materials, floor tiles, insulation, heating systems, electrical and sound insulation products, and automobile friction materials. Older buildings and structures are at higher risk, and it is strongly recommended to follow strict guidelines and wear appropriate protective gear when working in these conditions.

For approximately 40 years, from the 1930s to 1970s, the U.S. military also utilized large amounts of asbestos, namely on naval ships. Veterans bear a large brunt of asbestos-related diseases.

Secondhand exposure is also a threat if one lives or works with others who have intense or prolonged first-hand exposure. While no amount of asbestos is a safe amount, the worst effects are accompanied by exposure to extreme concentrations or prolonged exposure.

## HEALTH RISKS

The public’s recognition of these health hazards led to its prohibition in mainstream construction and fireproofing, but research has shown that the effects of asbestos can take decades to arise. Approximately 13,000 people die each year from asbestos-related diseases, and smoking multiplies the asbestos hazards.

### CANCERS FROM EXPOSURE:

- Mesothelioma
- Lung Cancer
- Ovarian Cancer
- Laryngeal Cancer

### NONCANCEROUS CONDITIONS:

- Asbestosis
- Pleural plaques
- Pleural Effusion
- Diffuse Pleural Thickening
- Pleurisy
- Atelectasis



# Laws and Regulations

The EPA and OSHA are the two primary federal agencies that enforce asbestos abatement litigation. In the U.S. today, there are few remaining asbestos-containing products, and asbestos is no longer mined. While not completely banned in the U.S., it is highly regulated, and its use has sharply declined since the 1970s. The U.S. does not have a comprehensive federal law addressing the issue. Instead, it is largely left to individual states to legislate, with each having different approaches for risk and legal claims.

According to the EPA, asbestos was officially identified as a pollutant by the Clean Air Act of 1970. OSHA adopted and utilized this information to form asbestos-related guidelines and procedures that are used by construction firms and building management today. The Clean Air Act led to the Toxic Substances Control Act (TSCA) of 1976, giving the EPA power to regulate new commercial chemicals and existing materials posing unreasonable health and environmental risks.

## EPA ACTIONS TO PROTECT FROM EXPOSURE

Working in tandem with the 1989 Partial Ban, the 2019 Final Rule strengthened the EPA's ability to rigorously review an expansive list of asbestos products that are no longer on the market before they could be sold again in the U.S. This action gives the EPA authority to prohibit the use of the products and/or put restrictions in place. Actions to protect the public from asbestos exposure under the TSCA include:

### DECEMBER 2020 FINAL RISK EVALUATION, PART 1: CHRYSOTILE ASBESTOS

Found unreasonable risks to human health for ongoing uses of chrysotile asbestos and no unreasonable risk to the environment for any condition of use. The EPA is moving to propose and finalize actions to protect against the unreasonable risks.


### APRIL 2019 RESTRICTIONS ON "DISCONTINUED USES OF ASBESTOS RULE"

Ensured that asbestos products that are no longer on the market cannot return to commerce without Agency evaluation. The EPA is not allowing new uses of asbestos. The uses of asbestos covered under the 1989 ban will remain banned.

### 1989 PARTIAL BAN

A partial ban was placed on the manufacture, import, processing, and distribution of some asbestos-containing products. EPA also banned new uses of asbestos to prevent new products from entering the marketplace after 1989.





Friable asbestos used as pipe insulation. While its use has been banned, it can still be found in old buildings and construction materials.

## Banned Uses of Asbestos

Below are examples of products and uses prohibited in the United States. For a full list, visit [epa.gov/asbestos](http://epa.gov/asbestos).

### 2019 FINAL RULE

- Adhesives, sealants, and coatings
- Arc chutes
- Beater-add gaskets
- Cement products
- Extruded sealant tape and other tape
- Filler for acetylene cylinders
- Friction materials
- High-grade electrical paper
- Millboard
- Missile liner
- Packings
- Pipeline wrap
- Reinforced plastics
- Roofing felt
- Separators in fuel cells and batteries
- Vinyl-asbestos floor tile
- Woven products
- Other building products

### 1989 PARTIAL BAN

Under this rule, these five uses of asbestos and any “new use” are banned in the U.S.:

- Corrugated paper
- Rollboard
- Commercial paper
- Specialty paper
- Flooring felt

### CLEAN AIR ACT (CAA)

- Asbestos pipe insulation and asbestos block insulation on facility components, such as boilers and hot water tanks, if the materials are either pre-formed (molded) and friable or wet-applied and friable after drying.
- Spray-applied surfacing asbestos-containing materials
- Spray-on application of materials containing more than 1% asbestos to buildings, structures, pipes, and conduits

# OSHA's Standards to Protect Workers

OSHA has three standards to protect workers from the hazards of asbestos depending on the type of workplace. For complete information on all of the requirements, see the standard specific to your type of workplace:

## GENERAL INDUSTRY

29 CFR 1910.1001 covers work in general industry, such as exposure during brake and clutch repair, maintenance work, and manufacture of asbestos-containing products.

## SHIPYARDS

29 CFR 1915.1001 covers construction, alteration, repair, maintenance, renovation, and demolition of structures containing asbestos during work in shipyards.

## CONSTRUCTION

29 CFR 1926.1101 covers construction, alteration, repair, maintenance, or renovation and demolition of structures containing asbestos.

## WHAT PROTECTIONS EXIST IN THESE STANDARDS?

- **Permissible Exposure Limit (PEL)** for asbestos is 0.1 fiber per cubic centimeter for air as an eight-hour time-weighted average (TWA), with an excursion limit (EL) of 1.0 asbestos fiber per cubic centimeter over a 30-minute period.
- **Assessment** of workplaces covered by the standards must be completed to determine if asbestos is present and if the work will generate airborne fibers by a specific method.
- **Monitoring** is necessary to detect if asbestos exposure is at or above the PEL or EL for exposed workers. If exposure has the potential to be above the PEL or EL, employers must use proper engineering controls and work practices.
- **Proper hazard communication and demarcation** with warning signs containing specific language in areas that have exposures are necessary.
- **Separate decontamination and lunch areas** with proper hygiene practices must be provided to exposed workers to avoid contamination.
- **Training** must be provided to all workers exposed at or above the PEL before work begins and yearly thereafter.
- **Medical surveillance** requirements are different depending on the industry. Medical surveillance must be provided for workers who engage in certain classifications of work.
- **Records** must be kept on exposure monitoring for asbestos for at least 30 years, and worker medical surveillance records retained for the duration of employment plus 30 years. Training records must be kept for at least one year beyond the last date of employment.



# Safely Handling Asbestos

## HIRE A CONTRACTOR VS DIY

Asbestos abatement or removal does not require an asbestos certification if the total area involves less than 100 square feet, but the job is risky. Removing even small amounts follow strict requirements. If going through a professional, a thorough screening and evaluation for the right contractor is the most important task. When a licensed contractor is hired, be sure that the individual has all of the appropriate abatement tools, training, licensing, and certification necessary to comply with state law so you are not inadvertently exposed to asbestos fibers.

## THINGS TO CONSIDER

- Hire only state-licensed contractors
- Call your Contractors State License Board to make sure the contractor has a valid, current contractor's license and certificate for asbestos abatement work, and to make certain that the contractor has a current and valid license bond.
- Get at least three bids
- Get three references for each contractor and review their past work
- Demand that the contractors provide the following documentation: Copies of required notification materials for the EPA and OSHA; Job site log-in sheets; Monitoring reports for air and personnel; Accident reports; Hauling and disposal information and permits as required; Final air monitoring report.
- Confirm that they have workers' compensation insurance for employees

If you select to remove the asbestos yourself, be sure to take all necessary precautions and use protective breathing equipment. Before you undertake any project in which you suspect the presence of asbestos, you first should try to determine whether the material contains asbestos. Avoid disturbing the material if at all possible. If you cannot determine from a label, the installer, or the manufacturer whether the material contains asbestos, it is best to assume that the product does contain asbestos.

People who frequently have worked with asbestos material (such as plumbers, building contractors, and heating contractors) can often make a reasonable preliminary judgment about products that contain asbestos based on a visual inspection. In some cases, you may want to have the material analyzed, especially if you have a large area of damaged material or if you are preparing a major renovation that will expose material contained behind a wall.

## WHAT TO LOOK FOR

White asbestos usually comes in the form of white, fibrous material around air conditioning systems, under carpets and ceilings, in closet linings, on roof boards, around pipes, or in any insulation boards or materials. However, microscopic asbestos fibers cannot be seen. If the product is not clearly labeled as containing asbestos, the only way to be certain is by sending a sample to a laboratory or having a specialized asbestos inspection/removal service examine the material.

The composition of any type of asbestos can be narrowed down to friable (brittle) or nonfriable. Friable asbestos materials can quickly release toxic dust into the surrounding air. Old pipe insulation and talc are two examples of materials that may contain friable asbestos. Nonfriable asbestos materials are a bit more durable. The toxic fibers are contained within the product, but can still be released upon sawing, scraping, or smashing. Asbestos cement slabs and vinyl asbestos tiles are two common examples of materials with nonfriable asbestos.



Friable - Roofing Felt



Friable - Vinyl Floor Tiles



Nonfriable - Loose Insulation



Friable - Pipe Insulation



Safe handling and disposal of asbestos materials and products is vital. If done improperly, it puts human health and the environment at risk.

## EQUIPMENT, HANDLING & DISPOSAL

An AS/NZS1716 compliant respirator featuring a particulate filter should be worn any time there's potential risk for exposure. Full-face and heavy-duty respiratory protection is also available with advanced electrostatic shielding technology, allowing the user to breathe comfortably while keeping the dangerous fibers from being inhaled.

While some situations may require the removal of asbestos materials, it may be necessary and safer to leave them undisturbed or encapsulate them with a sealant. For best advice, consult a certified asbestos abatement specialist. If the jurisdiction allows asbestos removal outside of the professionals, follow these precautions:

- Seal off the work area with plastic sheets and turn off the ventilation system.
- Wear respiratory protection with a high-efficiency particulate air (HEPA) filter.
- Wear disposable coverall clothing and gloves.
- Use a pump sprayer to keep the materials wet to suppress dust.
- Clean the area and/or use a vacuum with a HEPA filter.
- Dispose of the waste in clearly labeled bags at a landfill that accepts asbestos. It is the legal responsibility of the owner to properly package, transport, and dispose of the wastes without posing any unnecessary risk to public health.

In the U.S., EPA strictly governs the removal and disposal of asbestos. To comply with EPA licensing and guidelines, companies that remove asbestos must be "EPA Licensed Asbestos Contractors."





## ATI RESTORATION HEADQUARTERS

3360 E. LA PALMA AVENUE  
ANAHEIM, CA 92806

## CONTACT US

P: 800-400-9353  
E: HEALTHCARE@ATIRESTORATION.COM

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