

HEALTH AND SAFETY

Before starting any installation job, certain basic standards of safety must be applied. It is important that all crew members are briefed and updated on all requirements and regulations. This is important for the safety of you, the crew, the customer, and the jobsite.

Before considering going out to install a wood floor, it is imperative to be aware of the safety issues involved. Besides being a vital health issue, following safety regulations is also required by law. Failure to comply can cost you thousands of dollars in fines.



The Occupational Safety and Health Administration (OSHA) administers rules that aim to protect the safety of workers on the jobsite. These rules may vary according to whether the job is residential or commercial, and requirements are also different for homeowners and professionals. Check OSHA requirements in your area at www.osha.gov.

PART I Personal Protective Equipment

Personal protective equipment (PPE) is essential to keeping you safe on the wood flooring jobsite. There are six main types of personal protective equipment designed for wood flooring professionals:



Eye Protection

Thousands of people are blinded each year from work-related eye injuries that could have been prevented with the proper selection and use of eye protection. Eye

injuries alone cost more than \$300 million per year in lost production time, medical expenses, and worker compensation.

OSHA requires employers to ensure the safety of all employees in the work environment. Eye protection must be provided whenever necessary to protect against chemical, environmental, radiological, or mechanical irritants and hazards. Good eye protection is meant to:

- Provide adequate protection against the particular hazards for which they are designed.
- Be of safe design and construction for the work to be performed.
- Be reasonably comfortable when worn under the designated conditions.
- Fit snugly and not unduly interfere with the movements of the wearer.
- Be durable.
- Be capable of being disinfected and easily cleanable.
- Be distinctly marked to facilitate identification of the manufacturer.

In addition:

- Workers who wear prescription eye glasses must also wear required eye protection.
- Eye protection often fits comfortably over glasses.
- Safety goggles and safety glasses may incorporate prescription lenses as well.
- Dust and chemicals present additional hazards to contact wearers. OSHA recommends that workers have an extra pair of contacts or eyeglasses in case of failure or loss.

Ear Protection

Use of ear protection is very important due to the high decibel of many of the tools used in the wood flooring industry. Each hearing protection device has a noise reduction rating (NRR). The higher the number, the greater the decibel reduction. Which type of hearing protection you choose depends on a number of factors including level of noise, comfort, and suitability of the hearing protector. Most importantly, the hearing protector should provide the desired noise reduction. According to OSHA, people should wear a hearing protector if the noise or sound level at the workplace exceeds 85 decibels (A-weighted) or dBA.

Ear protection for wood flooring professionals generally comes in two types:

- A. **Ear Muffs:** Ear muffs consist of sound-attenuating material and soft ear cushions that fit around the ear and hard outer cups. They are held together by a head band.



- B. **Ear Plugs:** Ear plugs are inserted into the ear canal to block sound. They may be pre-molded (preformed) or moldable (foam). Insert ear plugs as follows:

- Roll the ear plug into a small crease-free cylinder.
- Reach over the head to pull up and back on the ear to straighten the ear canal.
- Insert the ear plug snugly.



Respiratory Protection

The respirators utilized in the wood flooring industry are used for the removal of contaminants from the air. Respirators of this type include disposable particulate respirators, which filter airborne particles, and air-purifying respirators with cartridges/canisters, which filter out chemicals and gases. It is important to note that a full beard will not allow masks to fully protect against particles, vapors, or gases entering the lungs. There are three main types of respirators used in the wood flooring industry:

- A. **Disposable Particulate Respirators:** Wood dust becomes a potential health problem when wood particles from processes such as sanding and cutting become airborne. Breathing these particles may cause allergic respiratory symptoms, mucosal and non-allergic respiratory symptoms, and cancer. Proper use of a disposable particulate respirator minimizes the effects of these airborne particulates, but does not protect against gases or vapors.

- B. **Half-Facepiece Elastomeric Respirators:** Half-facepiece elastomeric respirators are attached to a rubber or silicone facepiece that covers the nose and mouth. This type of respirator needs to be fit tested.

It can be cleaned, decontaminated, and reused. The useful service life of the filter or cartridges is how long it provides adequate protection



from harmful chemicals in the air. The service life of a filter or cartridge depends upon many factors, including environmental conditions, breathing rate, cartridge filtering capacity, and

the amount of contaminants in the air. Check with the manufacturer of the filter or cartridge for proper storage and service life recommendations.

- C. **Full-Facepiece Elastomeric Respirators:**

Like the half-mask elastomeric respirator, this respirator is a tight-fitting, air-purifying respirator with replaceable filters or cartridges attached to a rubber or silicone facepiece. It needs to be fit tested. The useful service life of the filter or cartridges is how long it provides adequate protection from harmful chemicals in the air. The service life of a filter or cartridge depends upon many factors including environmental conditions, breathing rate, cartridge filtering capacity, and the amount of contaminants in the air. Check with the manufacturer of the filter or cartridge for proper storage and service life recommendations.



Knee Protection

It is extremely important to protect your knees when doing any type of wood flooring work. When installing or finishing wood floors, you spend a lot of time on your knees. This position forces your body weight to the joints of your knees as well as the added weight of the equipment. Knee pads are the solution to preventing occupational knee injuries. Unprotected, sore knees force overcompensation in order to use your knees less. This means that you are transferring the weight that would have been on your knees to your lower back. The result is a sore back and sore knees. Be sure to use knee pads that are comfortable and protect your knees from injury. Avoid knee pads with a hard surface that may mar the flooring surface. There are many different types of knee pads available. The function of all knee pads is the same: to prevent knee injury and to protect your knees on the job.



Gloves

Disposable gloves are used to protect the skin from chemical exposure. They are made of different polymers including latex, nitrile rubber, vinyl, and neoprene. Protective gloves should be used when handling adhesives, sealers or solvents of any type. Check with your manufacturer for



specific recommendations for protection from specific chemicals. Gloves should always be removed before using saws or other large tools that can potentially catch in machines.

Jobsite/Construction Zone Protection

Any worker entering construction areas is required to wear construction zone protection. This is applicable to commercial and residential jobsites, as well as new and existing construction.

- A. **Footwear:** Construction workers should always wear work shoes or boots with slip-resistant and puncture-resistant soles. It's also a good idea to wear safety-toed boots to prevent crushed toes. These are often made with steel-toed features. Good foot protection is also key outside of construction zone jobsites. When installing wood floors, proper work shoes can protect from boards and other equipment damaging the foot. Boots and shoes should also be non-marking to prevent scuffing and scratching finished floors.



- B. **Hardhats:** Hard hats are an essential piece of personal protective equipment in a construction zone. When worn properly, they can protect against bumps to the head from fixed or falling objects and can protect your head from making accidental contact with electrical hazards. It is important to inspect hard hats regularly. Hard hats should be routinely inspected for dents, cracks or other signs of deterioration. Always replace hard hats after sustaining a heavy blow or electrical shock.

PART II Fire and Extinguisher Safety

Understanding how fire works will help promote fire safety. Fire safety is based upon keeping fuel sources and ignition sources away from each other. Three things must be present at the same time in order to produce fire:

- Enough oxygen to sustain combustion.
- Enough heat to reach ignition temperature.
- Some fuel or combustible material.

Together, these three things produce a fire. Take away any of these items and the fire will be extinguished.

Fires are classified according to the type of fuel that is burning. If you use the wrong type of extinguisher on the wrong class of fire, you might make matters worse. It is important to understand the five different fire (or fuel) classifications.



Different types of fire extinguishers are designed to fight different classes of fires.

The three most common types of fire extinguishers are:

- A. **Water:** These extinguishers are also called Air Pressurized Water or APW extinguishers. They are designed for Class A fires only.
- B. **Carbon Dioxide or CO₂:** These extinguishers are designed for Class B & Class C fires only.
- C. **Dry Chemical:** These extinguishers are also called ABC, BC, and DC extinguishers. They are designed for Class A, B, or C fires. Dry chemical is the type of extinguisher required for the hardwood flooring industry.

ABC fire extinguishers, also referred to as dry chemical extinguishers, are clearly labeled on each extinguisher. They are designed to put out fires by coating the fuel with a thin layer of dust, thus separating the fuel from the oxygen in the air. The powder works to interrupt the chemical reaction of the fire.



While installing hardwood floors, it is important you keep fire extinguishers on hand. The extinguisher must be ABC-rated in order to handle the potential fires that could happen on the jobsite.

Class A Fires

There are many different ways Class A fires can be caused and prevented on the jobsite.

- A. Spark and friction fires can be caused by the sparks created with the friction created from grinding nails or other metal objects. Spark fires can also be caused by improperly aligned equipment. Always be cautious of creating sparks near flammable materials.
- B. Spontaneous combustion can occur due to wood dust igniting in the dust-collection bag, vacuum, or container. Wood dust must reach a temperature of 400 F° or 204 C° for it to ignite. Always remove dust receptacles and dust

collection systems from the jobsite at the end of every day and dispose of them in a proper manner. The most-common type of spontaneous combustion in our industry is caused by stain rags that are not disposed of properly. Oil-based stains, natural oils, varnishes, shellacs, polyurethanes, and paint thinners are common products that can be culprits. Spontaneous combustion occurs when the solvent or substance begins to oxidize. This process causes an exothermic reaction, meaning it releases heat. If the heat has no way to escape, like in a pile of rags, the temperature will continue to rise to a level high enough to ignite the rags. A cotton rag containing any amount of stain residue has the perfect surface-area-to-mass ratio to spontaneously combust. Therefore, you should dispose of rags in an air-tight metal container.

Class B Fires

Class B fires are caused by flammable liquids and their vapors. On a wood flooring jobsite, these can include things like lacquer thinner, mineral spirits, solvent-based sealers, and some solvent-based adhesives. You can minimize the risk of Class B fires by turning off pilot lights and all ignition sources before using flammable liquids on the jobsite.

Class C Fires

Class C electrical fires are caused by faulty cords, loose connections, breaker box fires, bad switches, faulty equipment, or improper cord selection.

Fire Extinguisher

- A. Always have two extinguishers on hand: one in the truck and one on the jobsite.
- B. Know how to operate.
- C. Hold flat and level.
- D. Check for and maintain expiration dates.
- E. No smoking.
- F. Responding to a Fire:
 1. Sound the fire alarm.
 2. Call the fire department.
 3. Assist any persons in immediate danger to safety.
 4. Before deciding to fight a fire, check the following:
 - a. Is the fire spreading rapidly beyond the point where it started?
 - b. If the fire is already spreading quickly, it is best to evacuate the building.
 5. Do not fight the fire if:
 - a. You don't have adequate or appropriate equipment.
 - b. You might inhale toxic smoke.
 - c. Your instincts tell you not to.

6. Select the appropriate type of fire extinguisher.
7. Identify a safe evacuation route, and don't let the fire block your escape.
8. P.A.S.S. Method:



9. Back Away.
10. Evacuate.

PART III Electrical Safety

Electrical hazards can be found on nearly every jobsite. Whether the hazard is posed by damaged or worn power tools or cords, improperly grounded tools, or the power sources themselves, it is critical to understand the potential electrical dangers on the jobsite. Most wood flooring professionals are not licensed electricians. However, you should have a clear understanding of electricity and the requirements your equipment needs to operate properly. You must be thoroughly cognizant of electrical safety to maintain a safe work environment.

Equipment Requirements

Probably the most overlooked electrical safety precaution is knowing what the power requirements are for each piece of equipment on the jobsite. It is essential to read the operations manual for all equipment and understand what the electrical requirements are for each power tool.

Circuit Breaker Panels

The circuit breaker panel should be the first electrical item assessed on the jobsite. Read the owner's manual on the tools being used on the jobsite to determine power requirements. You should be able to determine whether proper power is available for the equipment you will be using on the job. If after evaluating the circuit breaker panel you are still unsure of power capabilities, a licensed electrician will need to set up electrical connections.



The following are some of the basics:

- A. **Neutral and hot wires:** Current flows from the panel toward the load along the hot wires and returns along the neutral. Each hot wire's copper tip ultimately connects to its control switch at the circuit breaker, and each neutral connects to a common terminal.
- B. **Main breaker:** This is the on/off switch to the entire breaker panel. A 200-amp breaker is common for a home of 2,000 square feet. Smaller buildings may use 150-amp or 100-amp; small homes and subpanels can use as little as 50-amp.
- C. **Double-pole breaker:** Uses the entire 240 volts available to the panel. The 15-amp breakers often handle baseboard heaters, 30-amp serve water heaters and electric dryers, 40- and 50-amp are for electric ranges, and the 70-amp could serve a large air conditioner or a subpanel.
- D. **Single-pole breaker:** The 15-amp and 20-amp are all-purpose breakers, running everything from lights and outlets to the garage-door openers.
- E. **15-amp AFI breaker:** Arc-fault-circuit-interrupter breakers can prevent fires caused by accidental electrical discharge.
- F. **Ground wires:** Grounding prevents a conductor not meant to carry current (such as the metal side of a clothes dryer) from causing injury if it's energized by a frayed hot wire. In a properly grounded system, appliances and metal boxes connect back to the grounding bus of the breaker panel. From there, the system is grounded to the earth via buried ground rods.



Voltage

A multimeter, also known as a VOM (Volt-Ohm-Milliammeter), typically measures voltage, current, and resistance. Always keep a multimeter on hand to test for proper voltage at power sources and through cords. Ensure power at the jobsite is sufficient for the equipment being used. If insufficient power is detected, the use of a power booster can help deliver adequate power to the tools being used.

Outlets

You should know the basics of the different types of power available at any jobsite. In the United States, 15- or 20-amp breakers are common. These are all-purpose power sources that run lighting and outlets. 30-, 40-, and 50-amp breakers are common power sources for electric dryers, electric ranges, or other large appliances. The type of plug in the wall will be dictated by its use. Have adapters made before arriving at the jobsite to be able to connect to each type of outlet. Also, ensure you take into account the type of power you are attempting to plug into in relation to the equipment you will be using. Note that power sources and requirements will differ in other countries.

Cords

The quality of cords can be easily overlooked, but can cause serious repercussions if not addressed.



- A. Check cords regularly for damage or deterioration. If they are cut, cracked, or have broken insulation, do not use them. Check and tighten connections on the plugs and connectors regularly.
- B. There are safety regulations you must follow on the jobsite related to extension cords. Occupational Safety and Health Administration (OSHA) requires three-wire extension cords at all jobsites. These 3-wire extension cords are designed for hard or extra-hard usage.
- C. Ground-fault circuit interrupters, referred to as GFCIs, must be used on all projects for 120-volt,

single phase 15-, and 20-amp services. When using a generator or temporary pole, a GFCI is required, or a portable unit must be used.

- D. When the grounding pin on a plug of a power tool is missing, repair or replace it before using the cord. Using a tool with a missing grounding pin can be extremely dangerous for the user. If a short were to develop in the tool, the user can become the ground in the system, and the electricity may travel through him or her.
- E. Wire gauge is a measurement of how large a wire is, either in diameter or a cross-sectional area. This determines the amount of electric current a wire or extension cord can carry safely as well as the electrical resistance and weight per unit per length.
- F. American Wire Gauge (AWG) is a US standard set for non-ferrous (copper or aluminum) wire conductor sizes. The “gauge” means the diameter.
- G. Extension Cord Amp Ratings:

LENGTH IN FEET	16 AWG	14 AWG	12 AWG	10 AWG
25	13A	15A	15A	30A
50	13A	15A	15A	20A
100	10A	15A	15A	20A

- H. Select the proper gauge cords for the machinery you will be using. Longer distances will require heavier gauge cords and/or use of a booster. When improper gauge cords are used, plugs, wires, and equipment motors can overheat, causing permanent damage. The size of the wire in an extension cord set must be sufficient to handle the amperage that will be drawn by the tools connected.

Cord Placement

Never place any cord around your neck or over your shoulders. It is unsafe, and if the cord had a nick or cut in the insulation, it



could get wet from sweat and short out. It also can cause body fatigue and muscle fatigue. Our body is a DC current, and the power source is an AC current, meaning it will interrupt the flow of current in our body. This causes muscle fatigue.

Disconnect

It is important to disconnect all power when leaving the jobsite. The cord itself should never be pulled to disconnect it from the power source; instead, remove it by the plug.

PART IV Tool Safety

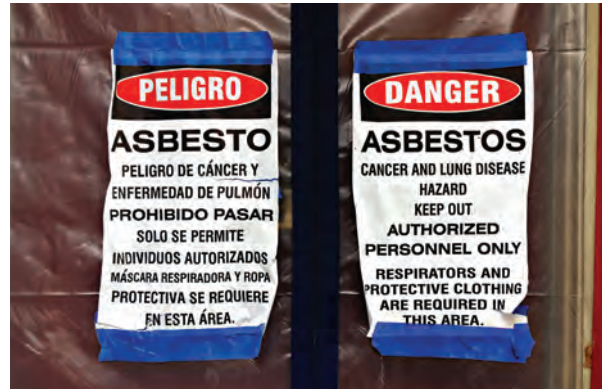
- Start with a safe work area. Keep the work area clean and well lit. Cluttered workspaces and improperly lit jobsites invite accidents.
- Do not operate any power tools in explosive atmospheres, near flammable liquids, gases or dust. Power tools can create sparks, which may ignite the dust of fumes.
- Keep bystanders, children, homeowners, and visitors away when using power tools.
- Grounded tools must be plugged into a properly grounded installed outlet. Never remove or cut off the grounding prong or modify the plug in any way.
- Store battery packs away from other metal objects like paper clips, coins, keys, screws, or other small metal objects. These items can make a connection from one terminal to the other, shorting the battery terminals together and potentially causing burns or fire.
- Do not abuse or modify the cord of the tool. Replace damaged cords immediately.
- Always hold the tool by the insulated gripping surfaces. Contact with hidden wiring or its own cord will make exposed metal parts of the tool “live” and could shock the operator.
- The wire gauge and length of any extension cord must be able to handle the amps of the tool. Find the amps (A) on the tool’s nameplate and use the chart to determine the necessary wire gauge for your extension cord length.
- Always read and understand the tool’s operator’s manual, tool markings, and the instructions packaged with the accessory before starting any work.
- Stay alert and watch what you are doing when using power tools.
- Do not use drugs, alcohol, or medication while operating power tools.
- Wear clothing that does not have strings or other fabric or design details hanging that could potentially get caught in a machine. This could cause serious injuries and is easy to overlook.
- Contain long hair when operating power tools.
- When not in use, tools should be stored in a dry place.
- Electric tools should not be used in damp or wet locations.
- Keep handles dry, clean, and free of oil and grease.
- Be certain the power tool’s switch is off before plugging it in or inserting a battery pack. Do not carry tools with your finger on the switch.
- Remove adjusting keys and wrenches before turning the tools on.

- Unplug tool/remove battery before changing accessories.
- Keep hands away from moving/rotating parts.
- Only use tools and accessories for the jobs for which they were designed.
- Always keep a firm footing when using power tools. Be sure you have balance and control before starting the job.
- Secure and support the workpiece. Use clamps and a stable surface.
- Keep guards in place and working properly.
- Do not force the tool.
- Use only accessories for the tool recommended by the tool manufacturer.
- Use dust collection systems whenever possible.
- Do not use the tool if the switch does not turn it on and off.
- Inspect the tool before using it.
- Tools should be serviced by a qualified repair center. Only use authorized parts for any repairs to the tool.
- Keep the tool clean. Clean and lubricate the tool only as directed in the operator's manual.
- Maintain labels and nameplates.
- Only use sharp blades/accessories on the tools.

PART V Industry Regulations

Specific legislation varies from region to region; be sure you understand the requirements for the country, state, county, or the city in which you are working. Regulations may impact your required working procedures or worker safety, record-keeping, purchasing plans, material disposal requirements, or other areas of your business. In particular, make sure you understand the current regulatory requirements regarding asbestos, lead, formaldehyde, and silica. Being unaware of these laws, or misinformed about how they affect you, can result in fines. The following is a simplified overview to familiarize professionals with the language used and general concepts of several US federal regulations and is not intended as a complete guide to your legal responsibilities. Persons seeking legal advice on compliance with any other law, regulation, or compliance requirement/claim should consult with the regulatory agency directly and/or a qualified legal professional.

- Asbestos** is a naturally occurring silicate mineral that has not been in use in construction for several decades, but can be an issue in older structures. It is composed of thin, fibrous crystals that can be released through abrasion, like sanding, and other processes.



1. When inhaled over long periods of time, asbestos exposure can result in serious and sometimes fatal conditions. These can include asbestosis, mesothelioma, and lung cancer. As a result, asbestos is no longer approved as a modern-day construction material.
2. Asbestos may be present in many older existing homes and structures. Homes or structures built prior to 1986 undergoing renovations should be tested for asbestos.
3. Wood flooring professionals can potentially be affected by asbestos in any remodeling project. If the work is being done in a home or other structure built prior to 1986, you need to be aware of any materials that may contain asbestos, and laws that could impact you.
4. Many states have their own laws regarding asbestos removal, and it is your responsibility to know the laws that are applicable for the area in which you are working. You can find the contact information for asbestos programs in your area at www.epa.gov/asbestos/state-asbestos-contacts.



- Lead** has not been in used in construction for several decades, but can be a concern in older structures during any renovation project.
 1. Lead is a naturally occurring chemical element that was used often in many construction products until the late 1970s.

2. Lead-based paint may be found on any surface in the home, both inside and outside. When it is disturbed during renovation, repair, or painting activities, dangerous amounts of lead dust can be created and released into the home or building.
3. Because it can be dangerous, the United States Environmental Protection Agency requires that when renovating, repairing, or painting homes built prior to 1978, they must be tested for lead. This requirement also applies to any non-residential building that primarily serves children, like a school or day care.
4. Wood flooring contractors have to be concerned with two specific areas in homes and other structures built prior to 1978:
 - a. If more than 6 square feet of any painted surface is disturbed (including baseboards), you must test for lead.
 - b. If you are unsure what type of finish is on the floors, you must test for lead. This is because some wood floor finishes produced prior to 1978 contained lead.
5. It is critical that testing take place before any work begins. Before you conduct any testing, your company must be certified to do so by the United States Environmental Protection Agency (EPA). This can be accomplished by following the requirements set forth by the EPA related specifically to the Lead Safety Renovation, Repair and Painting Certification program. You can get more information about the program at www.epa.gov/lead/renovation-repair-and-painting-program.
6. If after testing is completed lead is found to be present, you then must implement lead-safe work practices. To accomplish this, both your company, and the individual doing the work, must be trained by the EPA.
7. Compliance with this law is mandatory nationwide. Fines can be severe, and can range into the hundreds of thousands of dollars per violation.



- C. **Formaldehyde:** The U.S., as well as some individual states and other countries, have strict laws regarding formaldehyde emissions from composite wood products. See resources at the end of this section that will help you understand in detail your responsibilities based on your role in the supply chain.
1. The state of California was the first to significantly regulate formaldehyde emissions from composite wood products, and the program, which the industry refers to as "CARB," was the basis for the federal government's program, known as "TSCA Title VI," now in effect.



2. At the time of publication, both CARB P2 and TSCA Title VI directly regulate emissions from four products (plywood, particleboard, MDF, and thin MDF) and indirectly regulate items produced with those products. Both regulations require these composite wood panels meet specified emissions performance standards, regardless of what resins are used in their production process.
3. All mills producing directly regulated products are required to have a TPC (Third Party Certifier) confirm that their production procedures will lead to the required results.
4. At the time of publication, engineered flooring produced with plywood or MDF cores is covered under TSCA/CARB, as is laminate flooring; however engineered flooring with a lumber-core is not regulated.
5. Both regulations place a documentary burden on all parties in the supply chain to track impacted material and require buyers to exercise reasonable prudent precautions to ensure compliance. There are some differences between the rules, which generally will impact only manufacturers, but companies selling into the state of California should ensure that they are meeting CARB's unique requirements as well as TSCA Title VI. Some specific documentary burdens include:
 - a. Impacted flooring sold in the United States must be labeled to indicate it is TSCA Title VI compliant for formaldehyde emissions. All labels must include, at a minimum, a statement of compliance, a production date, and a name of the manufacturer or other responsible party.
 - b. A compliance statement must appear on transactional paperwork between businesses. The final rule allows for flexibility for panel producers, fabricators, importers, or distributors to choose the document on which to include the compliance statement. They may affix the statement to a bill of lading, invoice, or comparable document; all documents; or any combination

thereof. A statement of compliance is not required on invoices to final consumers.

- c. EPA requires records of production, purchases, and sales to be kept for three years, and made available to EPA upon request.
- 6. Some mills will use the term “NAF Exempt” or “ULEF Exempt” instead of Certified. This means that they have demonstrated to their TPC that they are using “No Added Formaldehyde” glue and regularly meet a lower emission level than required, or they are making material that is “Ultra Low-Emitting Formaldehyde,” which also means they regularly meet a lower emission level than required. Therefore, they are designated “exempt” from the quarterly testing by a TPC that is required for the regularly certified mills. It does not mean they are exempt from the regulation itself.
- 7. All parties in the supply chain should understand their responsibilities under these regulations. For more information: www.epa.gov/formaldehyde/formaldehyde-emission-standards-composite-wood-products.
- D. **Crystalline silica** is a common mineral that is a natural part of the Earth’s crust. It is found in materials like soil, sand, and stone. It is used to produce many man-made materials such as concrete and bricks.
 - 1. Inhaling silica dust can be harmful to humans. These particles are very small, about 100 times smaller than a grain of sand, so they are not visible to the naked eye. Short-term exposure poses little to no risk, but long-term exposure can result in serious illness, including silicosis, lung cancer, chronic obstructive pulmonary disease (COPD), and kidney disease.
 - 2. Occupational Safety and Health Administration (OSHA) has issued a respirable crystalline silica standard for construction. In the wood flooring industry, the most common source of silica dust is from grinding concrete to level a concrete subfloor, mixing self-levelers and patches to flatten a subfloor, and existing demolition in preparation for wood floor installation.



- a. Under OSHA rules, silica exposure levels are limited to 50 micrograms per cubic meter of air per eight-hours. To meet these requirements, floor grinders must be used according to manufacturer recommendations in order to minimize dust emissions.
- b. Dust collection systems must provide air flow as recommended by the manufacturer, and have a filter with $\geq 99\%$ efficiency, as well as a filter-cleaning mechanism.
- c. In enclosed areas, exhaust systems must be used to minimize dust accumulation, and a HEPA-filtered vacuum must be used to remove loose dust in between each pass. Dry sweeping and the use of compressed air to remove silica dust should be avoided.
- 3. In addition, employers must:
 - a. Establish and implement a written exposure control plan.
 - b. Designate someone to monitor the plan.
 - c. Restrict practices that increase exposure.
 - d. Offer medical exams for exposed employees.
 - e. Train workers to identify and limit exposure.
 - f. Maintain records for exposure, medical exams, and other related data.
- 4. Failure to comply with the regulation can result in significant fines ranging into the tens of thousands of dollars. More detailed information about the Respirable Crystalline Silica Standard for Construction is available from OSHA at www.osha.gov/Publications/OSHA3902.pdf.