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OSHA's Focus on Safety in Hard Surface Fabrication Shops

A look at the top 10 safety citations over the past year



by Mary Malotke

Every autumn the Occupational Safety and Health Administration (OSHA) publishes its list of the top 10 most frequently cited safety and health violations. This list is a great starting point to

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evaluate safety programs and ensure compliance.

The government began enforcing stronger crystalline silica regulations last year, and as such, it has topped the list of citations. Recent headlines in Texas, California and other states have illustrated the dangers of breathing silica particles, and regulating bodies have been focusing on compliance education in recent months. Hard surface shops are wise to take note of this, and all of the areas of compliance. Here are the most frequently cited standards in the Cut Stone and Stone Product Manufacturing industry (NAICS Code 327991) for last fiscal year (October 2018 through September 2019):



1. Crystalline Silica
2. Respiratory Protection
3. Hazard Communication
4. Powered Industrial Vehicles
5. Noise
6. Lockout Tagout
7. Machine Guarding
8. Personal Protective Equipment

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9. Electrical

10. General Duty Clause

1 – Crystalline Silica

Enforcement of the new Airborne Crystalline Silica regulations began on September 23, 2018. In this case, 20 percent of new citations this past year were for violations of the Crystalline Silica Standard. Surface fabricators are at high risk of exposure. It is time to ensure that your silica safety and respirator programs are fully compliant with the new regulations.

This rule requires engineering controls to keep workers from breathing silica dust.

OSHA has issued a final rule to curb lung cancer, silicosis, chronic obstructive pulmonary disease and kidney disease in America's workers by limiting their exposure to respirable crystalline silica. The rule is comprised of two standards, one for Construction, and one for General Industry and Maritime. About 2.3 million workers are exposed to respirable crystalline silica in their workplaces, including 2 million construction workers who drill, cut, crush or grind silica-containing materials such as concrete and stone, and 300,000 workers in general industry operations such as brick manufacturing and foundries. Responsible employers have been protecting workers from harmful exposure to respirable crystalline silica for years, using widely available equipment that controls dust with water or a vacuum system.

Key Provisions

- Reduce the permissible exposure limit (PEL) for respirable crystalline silica to 50 micrograms per cubic meter of air, averaged over an 8-hour shift;
- Require employers to use engineering controls (such as water or ventilation) to limit worker exposure to the PEL;
- Provide respirators when engineering controls cannot adequately limit exposure; ■ Limit worker access to high exposure areas;

- Develop a written exposure control plan;
- Offer medical exams to highly exposed workers;
- Train workers about silica risks and how to limit exposures;
- Provide medical exams to monitor highly exposed workers and give them information about their lung health; and
- Provide flexibility to help employers protect workers from silica exposure.

2– Respiratory Protection

The Respiratory Protection Standard was cited far more frequently than any other regulation. Surface fabricators may be required to use respirators to protect themselves from inhaling grit and dust that results when dry-cutting quartz, stone or masonry, and from exposure to chemicals released when sawing, routing, drilling or sanding synthetic sheet goods. Adhesives and other chemicals used in surfacing shops may produce hazardous fumes. Employers must establish and implement a written respiratory protection program with worksite-specific procedures, and update this program as necessary to reflect any changes in workplace conditions that affect respirator use.

- Employers must determine the employee exposure for each chemical in the workplace, and select a NIOSH-certified respirator with a protection level based on the respiratory hazard(s) to which the worker is exposed and workplace and user factors that affect respirator performance and reliability.
- Before using a respirator, a physician must determine that it is safe for the employee to use one. Using a respirator may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee.

- Each employee must be fit tested and you must select a respirator that is acceptable to, and correctly fits, the user.
- Each employee must be trained on the respiratory hazards to which they are potentially exposed, the proper use of their respirator, any limitations on their use, and procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining their respirator.
- You must designate a program administrator who is qualified by appropriate training or experience to administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.

3 – Hazard Communication

Trailing closely behind in frequency were violations of the Hazard Communication Standard. All chemicals that are used and stored must be included in a comprehensive “Right-toKnow” program. In 2012, OSHA updated the Hazard Communication Standard by adopting the Globally Harmonized System (GHS) of Classification and Labelling of Chemicals. GHS is an internationally agreed upon system that replaces the various classification and labeling standards used in different countries.

Chemical safety program must include the following:

- A written program that includes a list of all chemicals used and stored at the workplace
- Safety Data Sheets (SDS) and GHS labels for all chemicals
- Safe handling and storage procedures for each chemical
- Adequate Personal Protective Equipment (PPE)
- Comprehensive training program for employees
- Quick drench showers and eye wash stations (as required)

Citations of the Air Contaminants regulations were also significant. OSHA requires you to determine which chemicals are released in the air at your workplace and to recognize the safe limit for each. Then you must use all feasible engineering controls, such as ventilation and water delivery systems, along with administrative controls, regulated areas and safe housekeeping procedures, to reduce levels as much as possible. When these controls don't achieve compliance, protective equipment must also be used to keep the exposure of employees to air contaminants within safe limits. Whenever respirators are used, you must have a full Respiratory Protection Program.

4 – Powered Industrial Trucks

The fourth most frequently cited standard was the Powered Industrial Trucks regulation. The use of powered industrial trucks for handling of materials and finished products is critical to the successful operation of most surface fabrication shops. The majority of fork truck accidents can be attributed to lack of safe operating procedures and safety rule enforcement, as well as inadequate training.

In addition to training and education, applying general safety principles – such as proper work practices, equipment and controls – can help to reduce such workplace incidents. ALL personnel who work with or around forklifts must be trained on potential hazards and safe work practices. Operators must be trained specifically on the type of truck they will use and the working conditions encountered. Refresher training, including evaluation of operator's performance, must be conducted at least every three years.

5 – Occupational Noise Exposure

Much of the work performed in surface fabrication shops generates significant noise. Noise-induced hearing loss is permanent and irreversible, but is also 100 percent preventable. OSHA requires employers to assess noise levels and to take action when safe limits are exceeded.

OSHA's hearing conservation program has these components:

- Monitoring must be performed on an ongoing basis to assess noise levels.
- All employees who are at risk of noise induced hearing loss must be trained on their risks and how your program protects them.
- Audiometric testing must be done to measure any changes in hearing capability. A baseline audiogram must be done within one year of first exposure. Additional tests must be done annually to show if there is any loss of hearing ability at any frequency.
- All feasible noise controls, such as isolation or insulation, must be implemented when necessary to reduce sound levels as much as possible.
- When engineering and administrative controls cannot reduce sound levels to acceptable limits, hearing protectors must also be used. Hearing protector's attenuation levels vary, so employers must ensure that each employee's protector reduces their noise exposure.

6 – Lockout/Tagout

The purpose of a lockout/tagout program is to control the release of hazardous energy when servicing or maintaining equipment. Proper lockout/ tagout procedures safeguard workers from hazardous energy releases including electrical, chemical, kinetic and similar energy sources.

- Use lockout/tagout devices authorized for the particular equipment or machinery and ensure that they identify the individual users.
- Use lockout devices for all equipment that can be locked out. Lock out plug-connected equipment by enclosing the plug. Ensure that any new equipment can be locked out.
- If machines or equipment are not capable of being locked out, tags may be used instead. The tagout program must provide protection equivalent to a lockout program.
- Only the employee who applied a lockout/tagout device is permitted to remove it, except in special circumstances.

- Update and install energy control procedures at least annually.
- Training must include elements of the energy control procedure relevant to the employee's duties or assignment. Employee training must be documented. Training must cover pneumatic, chemical, thermal and other energy sources. All employers must develop a site-specific energy control program for their workplace and their machines and equipment being maintained or serviced. This is generally done by affixing the appropriate lockout or tagout devices to energy-isolating devices and by de-energizing machines and equipment. A formal written procedure for shutting down and locking/tagging out each point is needed.

7 – Guarding of Equipment, Machines and Tools

Surface fabricators cut, grind and polish natural stone, engineered stone and other materials, as well as create supporting wood structures. These work processes typically involve electrical powered tools, pneumatic power tools and woodworking tools, each of which has their own specific OSHA requirements with respect to guarding.

Each tool and machine used must be assessed to ensure they all have proper guards. New equipment comes with adequate guards. Older equipment must also be assessed to ensure that it is properly guarded. If it is not properly guarded, adequate guards must be provided, or the equipment must be discarded.

Employees must be trained on how the guards protect them and to leave the guards on at all times. Employees who remove or bypass guards should be disciplined.

8 – Personal Protective Equipment (PPE)

In the surface fabrication industry, hazards that require PPE likely include heat exposure, sharp edges, noise, vibration, dangerous equipment, dust and chemicals. When exposure to hazards cannot be completely eliminated through safe work practices and engineering controls, adequate protective clothing and equipment must be provided at no cost to each employee. This may

include gloves, goggles, hearing protection, face shields, steel-toed shoes, respirators and hard hats, depending upon where an individual works and what tasks he/she performs.

Employees must be trained how to use and maintain their PPE. When employees provide their own protective equipment, it is the employer's responsibility to assure its adequacy, maintenance and sanitation. PPE must be reasonably comfortable, must have the proper fit and must not overly interfere with the movements of the wearer. It must be durable and easily cleanable. It is the responsibility of the employer to ensure that PPE is worn when required and is kept clean and in good repair.

9 – Electrical Safety

Electrical hazards were another frequently cited area. On average, one worker dies from electrocution on the job every day. Even low voltage or low current can cause serious harm or death. Electric power-operated tools must either be of the approved double-insulated type, or grounded in accordance with OSHA regulations. Never use electric cords for hoisting or lowering tools.

Electrical safety citations for last year include the following, in order of frequency:

- Wiring methods components and equipment for general use;
- General requirements;
- Use of equipment;
- Wiring design and protection;
- Hazardous (classified) locations;
- Selection and use of work practices; and
- Safeguards for personnel protection.

10 – General Duty Clause

The OSHA General Duty Clause is a “catch-all” that states employers must provide employees with a workplace free of recognized hazards – even when there is no specific regulation for those hazards.

It is important to note that each employer is responsible for determining all risks in the workplace and taking measures to prevent accidents. Slab handling is one example for which there is no specific OSHA regulation, but where it is especially critical to determine safe work practices and ensure that employees understand and use these procedures.

The main goal of safety and health programs is to prevent workplace injuries, illnesses and deaths, as well as the suffering and financial hardship these events can cause for workers, their families and employers.

In addition, an effective safety program also reduces costs, including significant reductions in workers' compensation premiums, engages workers, increases productivity and enhances overall business operations. Developing a safety program may seem like a daunting and expensive task, but studies have shown a \$4 to \$6 return on every \$1 spent on safety and health.

Employers that keep in mind these more common areas of safety citation, and all of the required safety regulations, ultimately benefit from a more cost-effective workplace and safer and healthier workforce.

About the Author

Mary Malotke is Senior Engineering Manager for TechneTrain, Inc. TechneTrain has a full line of safety training programs and reference manuals designed for the surface fabrication industry, including a turnkey employee training program for the airborne crystalline silica regulations. These products are available from ISFA at discounted prices. For further information visit www.technetrain.net or call (800) 852-8314.

P.O. Box 627
Ingomar, PA 15127
888.599.ISFA



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