



Regulatory Compliance

OSHA's Machine Guarding Requirements: 5 Questions and Answers

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Machine guarding is one of OSHA's 10 most frequently cited workplace safety violations. This may be because the regulation can be confusing. To help you understand OSHA's rule more clearly, here are five questions and answers.

Injuries from heavy equipment can be devastating and even lethal, so the Occupational Safety and Health Administration (OSHA) puts significant emphasis on machine guarding.

Machine guarding refers to the barriers and protection systems that companies put in place to prevent injury to an employee working with a machine. Those protections may come in the form of a metal cage to separate the worker from areas of the machine that may cause injury, or a guard to protect a worker from fast-moving fan blades.

These protections are necessary, as workers operating and maintaining machinery suffer some 18,000 amputations, lacerations, crushing injuries and abrasions each year, *according to OSHA*, and over 800 deaths per year. "Amputation is one of the most severe and crippling types of injuries in the occupational workplace, and often results in permanent disability," OSHA says.

Understanding OSHA machine guarding requirements can be challenging, but ensuring your company follows the requirements correctly can help you avoid unwanted fines and penalties.

And inadequate machine guarding is frequently seen on *OSHA's top 10 list of workplace violations*. It's featured at number 10 on the most recent list, clocking up 985 violations and \$6,932,297 in penalties handed out to companies in the U.S. workforce.

Here are five questions (and answers) related to OSHA's machine guarding rule.

Question No. 1: What Are OSHA's General Requirements?

Simply put, OSHA requires that, when a machine in the workplace or any part of it or process that it performs may cause injury, it must be made safe for workers through guarding.

Under its general requirements for machine guarding (*standard number 1910.212*), OSHA requires that one or more methods of machine guarding be provided to "protect the operator and other employees in the machine area from hazards such as those created by point of operation, ingoing nip points, rotating parts, flying chips and sparks."

Examples of guarding methods are barrier guards, two-hand tripping devices and electronic safety devices. They may be used to safeguard machines such as lathes, hydraulic presses and saws.

Guards must be attached to the machine where possible and secured elsewhere if for any reason they cannot be attached to the machine. OSHA adds that the guard should not lead to an accident by itself.

Read more: OSHA Recordable vs. Reportable Incidents: How to Tell the Difference

Question No. 2: What Must an Employer Do?

To protect workers from preventable injuries, employers must of course put in place adequate guarding and employee training to shield machine operators.

How can employers do this? By starting with hazard recognition: establishing the types of machinery they have in their workplaces, and then determining whether those machines must comply with a specific safety standard or are covered under the comprehensive guarding requirement of 1910.212, which is described above.

Employers should then look to provide one or more methods of guarding workers in the machine area from hazards that arise in the point of operation, which is one of the most important areas to safeguard when it comes to machine safety.

Most machines consist of three parts: operating controls, a power transmission device and the point of operation. The point of operation is, essentially, the part of the machine where work is being performed on the material, such as cutting, boring or drilling, and therefore the part of the machine where a worker is most likely to be injured.

As OSHA states, the "point of operation of machines whose operation exposes an employee to injury shall be guarded," adding that "the guarding device shall be in conformity with any appropriate standards," or in the absence of applicable specific standards, "shall be so designed and constructed as to prevent the operator from having any part of his body in the danger zone during the operating cycle."

Machines that usually require point-of-operation guarding include power presses, milling machines and portable power tools, according to OSHA.

Read more: Machine Guard Infographic: The Point of Operation

Question No. 3: Which Machines Require Specific Standards?

OSHA's general requirements for machine guarding are designed to protect employees from dangerous machinery and to guard them from injuries at a machine's points of operation, but the organization also lists some standards for specific machines.

- Revolving drums, barrels and containers must be guarded by an enclosure that is interlocked with the drive mechanism, so that the barrel, drum or container cannot revolve unless the guard enclosure is in place.
- When the periphery of a fan's blades is less than 7 feet above the floor or working level, the blades must be guarded, and the guard must have openings no larger than half an inch.
- Machines designed for a fixed location must be securely anchored to prevent the machines from moving.

OSHA's machine guarding requirements do not cover every type of equipment, but given that all machine guarding flaws are citable under OSHA's General Duty Clause, the ***ANSI B11.19-2010 standard*** "is considered the most authoritative standard on machine guarding," notes safety consultancy Colden Corporation *in a blog post*.

This standard is especially useful, the blog post notes, "when OSHA standards are vague or do not exist for a specific piece of equipment."

Read more: Why You Need to Perform Workplace Hazard Assessments

Question No. 4: What About Exceptions for Specific Processes?

As Colden notes in its blog post, sometimes exceptions are required for specific processes.

For example, machine guarding requirements for some powered saws differ depending on the material that is cut: metal vs. wood, for instance.

However, while OSHA will clarify the discrepancies with letters of interpretation, as necessary, those letters are only valid if they are listed on the OSHA website, says Colden, so a search for letters using a search engine such as Google may reveal an old letter that is no longer valid.

Read more: 5 Big Machine Guarding Mistakes and How to Avoid Them

Question No. 5: What Else Is Important to Know?

Understanding OSHA machine guarding requirements can be challenging, but ensuring your company follows the requirements correctly can help you avoid unwanted fines and penalties.

Here are some factors to bear in mind:

- New machinery may come with installed guards, but used equipment may not have those guards in place. While it may be possible to purchase the guards from the original manufacturer, you may also opt to install your own. If you do, you should make sure they are built by a qualified professional and don't create extra hazards for employers.
- Bearing in mind the above, you may want to make machine guarding part of the criteria you use to evaluate new equipment purchases. Doing so will keep employees safe and reduce costs from fines and injuries. And adding guards after the fact to new equipment may be costly.
- Equipment purchased from overseas providers may not have the same machine guarding standards as those made by U.S. manufacturers.

Read more: OSHA Machine Guarding Checklist: Retrofit and Customize Your Guards

How are you making sure your employees are safe when working with machines? Share your insights in the comments below.

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