



Safety

Your PPE Primer for Machining and Metalworking Jobs

Kip Hanson | Mar 28, 2024

Think of personal protective equipment as the last line of defense between workers and the potentially hazardous environments in which many of them do their jobs.

It can and does save lives—when the right safety gear is worn correctly.

Meeting both of those requirements, however, is no simple feat—despite an array of federal rules intended to support the U.S. Occupational Safety and Health Administration’s mandate of protecting America’s workforce from hazards.

While the general requirements spelled out in OSHA Standard **1910.132** cover equipment from protective clothing to respiratory devices and protective shields wherever necessary, they often lack specifics.

Details, when available, may be sandwiched into an array of occupation-specific regulations. Some rely on, and refer to, industry guidelines developed by standard-setting organizations such as the American National Standards Institute, or ANSI.

‘Are My Safety Glasses Good Enough?’

The maze created by those intertwining threads can make it bewildering, to say the least, to find answers to granular questions such as, “Are my safety glasses good enough?” or “Do I really have to wear steel-toed boots?”

While large manufacturers often have a safety office or even an entire department responsible for workplace safety, small to medium-sized machine shops, sheet metal fabricators, tool and die houses and plastic injection molders—not so much.

There, PPE decisions are often left to a supervisor or purchasing person, whose primary responsibility is finding the best price. And even for larger organizations that employ people whose only job is safety compliance, OSHA regulations can prove challenging to decipher.

“Every manufacturing environment and facility is different,” says Gina Shaw, national account

manager for Tennessee-based PPE provider **MCR Safety**. "Let's say you need a glove for handling sheet metal. Well, what's the gauge? How big are the parts? Are there any sharp edges? Is there welding involved? Many variables help explain why the OSHA standards are written the way they are."

Interpreting each of the standards and their nuances correctly is critical since failure to use the right PPE can lead to severe injuries or, in some cases, death.

Workplace Accidents: Stitches or Worse

And even if an accident requires nothing more than a trip to the emergency room for some stitches, it could still drive up workers' compensation and insurance rates. Should OSHA get involved, employers could face **stiff penalties**—a serious violation can mean a \$16,131 fine; failure to correct might cost 10 times that amount.

If you have questions or concerns about **getting the right PPE**, however, help is available: You can telephone OSHA at 800-321-6742 (OSHA) or reach out to MSC's team of Industrial Safety Consultants.

MSC offers a wide range of safety services and solutions on its **website**, and its team of certified safety consultants is available to help with a safety assessment.

An on-site assessment not only provides a comprehensive view of a facility's PPE needs but can also help demonstrate a good-faith effort to ensure worker safety if OSHA conducts an inspection.

Additionally, MCR's Shaw offers common sense advice for some of the more common types of PPE and their usage:

- **Clothing:** OSHA rules mandate a variety of protective garments, from gowns to hoods and aprons, depending on the type of metalworking a business does. Welding, for example, requires not only visors but in some cases, flame-resistant garments such as leather aprons and jackets. Common sense plays a role, too: To avoid getting clothes caught in a piece of metalworking machinery, the simplest solution is to always tuck in your shirt and roll up your sleeves when working; otherwise, look for garments designed to break away when trapped.
- **Respiratory Devices:** People in the mining or chemical processing industries know that respiratory devices are vital to prevent lung damage (or worse). The same goes for machine shops where smoke and coolant mist is common. Routinely inhaling dust, smog and fine metal particles is a recipe for health problems; either wear a suitable face mask or invest in an industrial-grade air purifier. In many cases, OSHA requires them.
- **Eye and Face:** Safety glasses are a necessary part of life on the production floor, no matter what you make. But are they the right kind? Are side shields necessary? Is any laser-cutting or welding being performed in the area, and if so, does the eyewear have UV protection? What about goggles or a full-face shield? The website for **Prevent Blindness** states that "thousands of eye accidents happen each day," and the majority are preventable by using the correct safety eyewear.
- **Hearing:** Ask a longtime punch press operator a question, and you'll likely hear, "What did you say?" in response. According to The National Institute for Occupational Safety and Health, **nearly half** of all manufacturing workers have been exposed to hazardous noise, with 28 percent of them reporting that they don't wear earplugs or earmuffs. Many go on to develop hearing loss and tinnitus, both of which are easily avoided with appropriate hearing protection.
- **Skin Protection:** Welders routinely wear leather gloves to prevent burns when joining workpieces. Machinists use latex gloves to prevent dermatitis from working with cutting fluids and oils all day. And as Shaw suggested earlier, sheet metal workers should wear gloves to avoid cuts from sharp edges, as should anyone deburring parts, cleaning a bandsaw or unloading bar stock at the receiving door. That said, wearing the wrong gloves can lead to serious injury. Heavy or loose gloves can easily get caught in a drill press or rotating spindle and be ripped off, possibly causing hand injuries in the process. Make sure your gloves are appropriate for the job you're doing.

- **Footwear:** Swiss-style lathe operators and machinists making small parts might scoff at the idea of wearing steel-toed boots; that is, until they drop a bundle of steel or bucket of cutting fluid on their foot and have to wear a cast for a month or more. For the \$50 or so upcharge, there's no reason not to invest in a pair of high-quality work boots with safety toes and leather uppers.

"When our field people go on-site, they often see that workers aren't wearing the right PPE," Shaw says. "I'm not suggesting that these people are negligent in any way, nor are those responsible for buying the safety equipment. They just don't know. That's why we have safety consultants whose only job is to train our customers on what PPE is best for any given situation and how to use it."

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