Personal Protective Equipment

How to Pick the Right PPE: Outer Protective Gear

Julie Sullivan | Nov 30, 2017

According to data from the CDC, 20 million workers currently use PPE on the job. But just because workers are wearing outerwear, it doesn't mean they're adequately protected. Are your employees wearing the right outer gear on the job?

For employees in industrial jobs, clocking in and suiting up in personal protective equipment is practically second nature––and the statistics reflect that routine. According to the Centers for Disease Control and Prevention, roughly 20 million workers use PPE on a regular basis to protect themselves from disabling injuries, illnesses and death, which includes exposure to biological particles, chemical agents and splashes.

But with the National Institute for Occupational Safety and Health listing occupational skin diseases as the ***second most common type of occupational disease***, are those 20 million workers *really* being protected by their gear?

"The most prevalent kinds of fatal injuries in the workplace involve exposure to harmful substances, and chemical substances in particular," explains Mark Bushey, category manager at ***Kimberly-Clark Professional*** in a ***webinar*** from MSC and Kimberly-Clark. "What's more, from a cost-avoidance standpoint, these types of injuries can be extremely expensive for both your organization and employees. With the average human having roughly 22 square feet of skin, it's the largest organ we have––making it critical that we protect it properly."

Research from ***Ansell*** found that 65 percent of workers in automotive, machinery and chemical industries encounter harmful chemicals on the job, with many of those individuals subsequently suffering from Irritant Contact Dermatitis (ICD) burns, cancer and other deadly or debilitating side effects. To complicate matters further, there are more than ***100 million*** registered chemical substances in existence, each with their own unique set of hazards, consistencies and permeation rates.

It's clear that workers need to be better suited, quite literally, to do their job. But with so much confusion surrounding PPE and ever-evolving regulations and standards that vary by location, selecting the right gear can be a significant challenge.

When Should PPE Be Considered in Your Health and Safety Procedures?

Although supplying PPE might seem like the most responsible measure to take when protecting employees, according to Bushey, suiting up should actually be a last resort.

"PPE is incredibly important, but it's not necessarily the first route to take," he explains. "It's really a last resort. For example, if you see an extension cord on the ground, you could easily suggest that employees wear hard hats and extra padding in case of trips. But there are so many other things to address prior to that step. Can the cord be replaced? Can you remove it?"

Although an extra cord obstructing a walkway doesn't necessarily pack the same kind of danger as a chemical substance would, it helps to illustrate the CDC's ***Hierarchy of Controls***. Can the chemical in question be eliminated? Can it be substituted? Can you isolate workers from the hazard? Can you administratively change the way you work? If "no" is the answer to all of those questions, according to Bushey, you can then implement PPE.

Identify Your Safety Hazards: Dry Particulates, Liquids or Chemical Exposures?

According to Bushey, selecting the ***proper PPE*** starts with determining if the hazard your staff is exposed to is a dry particulate, liquid or chemical.

"For dry particulates, the main hazard is that oftentimes we can't see it," he says. "Many companies will overprescribe because they don't understand how much of the particulate is in the environment."

With liquid, the main concern involves suit penetration. "How is the liquid being used? If it's an occasional splash, that's far different than a power stream of liquid coming at you. Is the suit strong enough so there will be no penetration?"

While dry particulates and liquids are associated with their own dangers, chemicals (not surprisingly) demand the most attention when selecting PPE. "Understand what chemicals are being used or that employees are being exposed to and its concentration," Bushey advises. In addition, when it comes to chemicals, it's important to understand whether a suit protects against liquid and vapors. He also explains that most tests involving chemical protection equipment are set to measure penetration for roughly 60 minutes. So if working time falls beneath or beyond that time frame, you'll need to test the protection for yourself. And testing, according to Bushey, will be your company's best bet in determining the appropriate PPE needs for your work.

"Consider enlisting the help of your distributor to conduct a 'hazard walk,'" he suggests. "After reviewing the outcome of that walk-through, you'll need to trial and test the different coverall options for yourself––it's hard to make a decision based solely off what you see on paper or your distributor's suggestion."

Although not as paramount as safety, your bottom line is also a consideration.

"You want to make sure the output of your business isn't destructed by the coverall," Bushey explains. "Will the suit leave lint or break down, leaving foreign debris, in the process? Will the threads or other components of the suit fall into the process? Even the smallest particles can cause significant rework. Review your technical data sheets, but always make sure to test the coveralls thoroughly."

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> Mark Bushey
> Category Manager at Kimberly-Clark Professional

When Selecting PPE, Put An Emphasis on Comfort and Quality

Just because your team selects ***highly protective, job-specific garments*** for employees, that doesn't necessarily mean they'll wear them correctly––or even at all.

"It all comes down to comfort," says Bushey. "Are your employees ripping out garments? Are they constantly pulling up their sleeves? It might only take a couple of seconds to do, but multiply 100 employees pulling up their sleeves multiple times per day, and that's a substantial issue." A 2013 *Occupational Health & Safety* ***survey*** showed that 70 percent of respondents found their PPE to be too hot or uncomfortable. "Uncomfortable employees lead to noncompliance. All it takes is one splash of a chemical and there was no point in wearing the suit in the first place," says Bushey.

Of course, even if the PPE you select is comfortable and well-insulated from chemical exposure, seam permeation could still be a problem if you're not careful. "Pay careful attention to the seams on coveralls as they are one of the most susceptible areas for penetration and leak through to happen… When we talk about protecting against vapors, we start taking about tape-seam garments, so actually having that extra layer of protection over the garment to ensure that [penetration] doesn't happen ."

Bushey also notes the need to ensure suit selection is (at least somewhat) sustainable.

"Especially with an influx of millennials entering the workplace, sustainability has become a growing trend," he explains. "Can your suits be recycled, or is there another way to reduce your carbon footprint?" He notes that some companies offer a recycling option where used garments are transported to a recycler and remade into usable products.

Do your employees complain about PPE discomfort? What does your shop do to address those concerns? Let us know in the comments.

