

## product expert series

# UP-TO-DATE SAFETY

BY KRISTEN CHIPMAN

Safety equipment makers continue to improve their products—as well as delivery methods—in response to ever-changing regulations and the current economic climate.

**GIVEN THE VARIETY** of operations that occur in a fabrication shop, it's no surprise that fabricator safety concerns are widespread. While some of these concerns apply to multiple industries, others are specific to fab shops.

Recent and proposed OSHA, ACGIH (American Conference of Industrial Hygienists) and EPA regulation changes have only increased these concerns. As the fabrication industry adjusts to better understand and meet these regulations, suppliers of industrial engineering controls and personal protective equipment have also been working to upgrade their products, as necessary, to meet these requirements.

### Welding Fumes

One potential concern is the effect of welding fumes. In 2006, OSHA published the final *Hexavalent Chromium Standard*, which sets limits on that compound, and ACGIH, in 2010, proposed more stringent requirements on manganese fumes. In addition, new clean air regulations were announced by the EPA last year. All of these developments affect how fabricators deal with welding fumes.

As with any risk, the first step is to eliminate the hazard if possible. Although it's not commonly feasible to change base metals, many of these hazards can be reduced by enacting minor changes in welding wire or welding processes. Assuming that a major overhaul to the welding process is not possible, the next step for shops to take is to minimize exposure levels. Many vendors supply engineered central ventilation systems that can effectively reduce weld fumes in most shops. This option is typically very expensive, however, and not feasible

in all circumstances. That said, more cost-effective point-of-operation ventilation systems are becoming available. These fume extraction devices can be broken down into three areas:

- Fixed (mounted to a wall or work station)
- Portable units (small enough to pick up and move)
- Mobile units (slightly larger units on wheels for easy movement in shop environments)

In situations where these solutions are employed but where employees still face exposure to fumes, the last line of defense is personal protective equipment, and there are plenty of products in this category.

The most appropriate type of respiratory device depends on the exposure level against which shop workers need to be protected. Negative pressure, half mask and/or full-face respirators are often used. A recent trend in the fabrication shop welding operations is the use of a powered air-purifying respirator (PAPR). While generally much more costly than other solutions, they can increase comfort for employees by limiting the need for multiple personal protective equipment (PPE) items. PAPR assemblies work as a hard hat, eye protection, welding hood and respiratory protection all in one. The air can also be cooled and/or heated for work comfort where extreme temperatures are a concern. While it is true that PAPRs can reduce the wearer's mobility and peripheral vision, their design has greatly improved over the last few years; they have become lighter, they have more features, their batteries last longer and their costs have leveled out due to competition.

### Fall Protection

Another hazard that the fabrication industry is well aware of is injury due to falls. The use of engineering controls—scaffold, aerial lifts, handrails, etc.—has greatly increased in recent years but often does not completely remove the need for personal fall protection. In addition, protecting a worker from a lower level when that level is only a few feet below them is a huge challenge within the industry. This, along with the fact that many shops have overhead cranes and/or very high ceiling structures, significantly limits the anchorage points available for tie-off systems.

For several years, manufacturers of fall protection systems have been working with the industry to invent and manufacture solutions to fall-protection issues. Recently, there has been a trend towards the use of personal self-retracting lifelines (SRLs). The intent of SRLs is to limit an employee's fall to a matter of inches, not feet. This makes them very efficient



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for use in lower elevation fall hazard situations. There are even personal SRLs available that can be used in a horizontal tie-off situation when tying off vertically is not possible. It is important to note one potential drawback of SRLs, though: If a person is, say, 10 ft from the tie-off point, they could theoretically fall and swing like a pendulum, potentially impacting an object. Employers should work closely with a fall protection supplier to understand the appropriate usage and limitations of any SRL system and what supplemental safety equipment might be needed—not to mention their applicability for a specific shop—and train their employees on their features.

### Industrial Vending Machines

When it comes to PPE, it's not just about what to use; these days it's increasingly about how PPE is supplied. The economic downturn has caused many fabrication shops to cut back on employees. Businesses are running lean and the task of inventory and ordering of safety supplies and consumables has become more of a challenge. Out of this need, a creative and increasingly popular service has been born, that of the industrial vending machine.

Several vendors now offer these machines for consumable and safety items. Gone are the days of "Are we all out of face shields again?" or "Do you know when our glove order is coming in?" These vendors set up on-site machines to provide shops with whatever is needed in terms of safety-related items. The vendors stock the items for the shop (typically out of a local store) and many have an online minimum-max-

imum program so supplies never run out in the shop. Shops are looking more and more to this type of system, as ease of ordering and automatic billing save administrative time—plus, items are readily available. Not only that, but their sales are

tracked via reporting software by employee name or number, which can assist businesses in minimizing theft or misuse of what is purchased. And, both fab shops and equipment suppliers can keep tabs on replacement rates for different types of equipment—which can potentially lead to the development of longer-lasting safety equipment that is more economical and, ultimately, safer.

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