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**How the A10 Standards
Can Help Improve
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Demolition Safety** p. 24

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Tis the Season...Keep Your Eye Out for Construction Workers

When we launched our first issue last fall, construction season was almost winding down with projects being completed before the winter weather came in. That certainly was true where I live in metro Detroit. Now, as we upload this May issue to the printer, construction projects and work zones are in full force and quite busy everywhere around here, which I am sure is true for the entire U.S. I have to admit I do get frustrated sitting in traffic because three lanes go down to one on weekends, but at the same time, it allows me to digest all that is going on with safety in mind—rebuilding a bridge, repairing concrete, watching an excavator dig and throw dirt & broken concrete into a gravel hauler, or even watching a crew of workers build a retaining wall for noise control.



When I launched this publication, I had no idea how deep and wide the topics would be that we would be writing about. This issue has eight different articles with such diversification including jobsite safety, PPE, and safety related standards that construction workers will find useful and in compliance. You can also check out the laundry list of standards you can buy from the American Society of Safety Professionals on Construction and Demolition Operations Standards; they are all here in one place at www.assp.org/standards/standards-topics/construction-and-demolition-operations-a10.

I recently attended the ATSSA show, which was an eye opener for me about traffic and work zones. I have a lot to learn about the different parts of construction by always keeping an eye out for “safety”. It was great to see how well attended the show was, especially after attending so many Fall 2021 shows that were a fraction of pre-COVID levels.

I continue to strive to bring you content that provides critical information to keep your construction workers safe and even offers you best practices that you can share with your teams. Look for two more issues this year, in July and September. As always, your comments and questions are welcome. And if you want to contribute a story on keeping construction workers safe, drop me an email at randy@rdgmedia.net.

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Randy Green, President & Group Publisher

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A close-up photograph of a construction worker wearing a blue and white striped shirt, a high-visibility yellow safety vest, and heavy-duty tan leather work gloves. The worker is using a chainsaw to cut through a large, dark, rusted metal pipe that is partially buried in a trench. The trench walls are made of dirt and gravel, and there is some water in the bottom of the trench. The worker's hands are positioned on the chainsaw, which is cutting into the pipe. The background shows more of the trench and some loose soil.

Suitable hand protection for workers performing trenching or working in trenches needs to include protection against cuts and abrasions. *Photo courtesy of PK Safety.*

GLOVES FOR TRENCHING

How to Find the Perfect Pair

BY RICK PEDLEY, CONTRIBUTOR

In construction trenching, workers remove rocks, soil, and other material from the ground for the placement or repair of buried utilities, pipelines, water transport, and other potentially hazardous activities. These materials can be dangerous to workers, especially on their hands.

Trenches are deeper than they are wide, and cave-ins pose the greatest risk to workers. While systems including shoring, benching, sloping, and shielding help protect workers, and safety measures are in place from a competent person regularly in-

specting the site, workers are largely responsible for their own safety and the safety of their coworkers while in the trenches. It's vital that workers follow the relevant standards and safety systems to protect themselves and others working with them. These safety systems also include wearing and using protective gear they're trained on, including a harness and lifeline, hard hat, and safety gloves.

Focusing on hand protection

Suitable hand protection for workers performing trenching or working

in trenches needs to include protection against cuts and abrasions. Those hazards exist in the form of equipment, as well as the environment that includes metal, dirt, and rocks. Cut-resistant gloves will protect from lacerations and some punctures from job hazards, whereas abrasion-resistant gloves protect against friction and other abrasive materials and work conditions. These gloves come in an array of materials and combinations of materials, ranging from leather to chainmail, based on the kinds of hazards the

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worker needs protection against.

Leather safety gloves made from cowhide, pigskin, or goat-skin, may also be a good option during milder trenching work. They stretch and don't limit one's range of motion, can grip equipment easily, and can be highly durable while offering decent protection from the different elements of this type of work. Reinforced leather safety gloves can offer cut resistance and be designed for electrical safety.

Impact resistance is an important quality for trenching gloves as well. Construction work in general, requires PPE like hard hats, steel-toed boots, and safety glasses to protect against fragments, dust, stones, and other flying pieces of debris from drilling, sawing, sanding, and grinding. Your knuckles and hands are in danger from falling objects, swinging equipment, and other impacts, especially because trenches are such tight spaces where you can't always get away from a hazard easily. Impact-resistant gloves can be ergonomic, helping you avoid the pain from pounding, and they prevent hand injuries from outside impacts as well.

Narrow in on your needs

Will you be welding, cutting, or brazing during trenching and shoring? You'll need specialized welding gloves for that purpose. These gloves need to protect against flames, heat, and metal splatter dangers. Standard gloves that protect against cuts, flames, heat, and sparks won't offer enough protection during this type of work. Welding gloves will be insulated with thermal protection and have longer sleeves than other safety gloves to help protect your arms and work with other PPE that you're wearing.

There are many glove options on the market and depending on the specifics of your trenching and shoring work, you might need a combination of protections, or more



Impact resistance is another important quality for trenching gloves.

Photo courtesy of PK Safety.

Your knuckles and hands are in danger from falling objects, swinging equipment, and other impacts, especially because trenches are such tight spaces where you can't always get away from a hazard easily.

than one pair for different aspects of your job. Keep in mind that the more kinds of protection that a glove offers, the less dexterous it becomes. While more protection than you need sounds great, making sure that you're protecting only against those dangers you're likely to face means that you'll be much more productive and comfortable at work.

No matter what kind of glove you're wearing on the job, you should regularly inspect them for damage. If you find that your gloves are damaged before you begin your shift, or something happens on the job to damage them, they need to be immediately removed from service and replaced or repaired, as appropriate. **CS**

Rick Pedley, PK Safety's President and CEO, joined the family business in 1979. PK Safety, a supplier of occupational safety and personal protective equipment and manufacturer of their own new FR line GRIT, has been operating since 1947 and takes OSHA, ANSI, PPE, and CSA work safety equipment seriously (www.pksafety.com/contact-us).

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Putting a Cap on Head Injuries

Understanding the Importance of Head Protection.

BY RYAN CORCORAN, CONTRIBUTOR



A helmet's outer shell helps deflect impact, but the force energy is distributed predominantly through the suspension system. Image courtesy of Global Glove.

Choosing head protection can be overwhelming with multiple styles, types, and classes available in the marketplace. Keeping focus on what users require should be a top priority for safety professionals. Knowledge of current and upcoming standards is imperative to providing proper recommendation of head protection. The key points to look for when assessing a hazard is whether or not there is potential exposure to high or low voltage, as well as the angle of potential impact. This article summarizes different variations of head protection, existing standards, and proposed standards.

Types of Head Protection

Helmets come in five typical styles: cap, full brim, vented, climbing, and bump cap. Each has unique features and applications.

- **Cape Style Helmets:** Cap style helmets have a brim on the front to shade the eyes from the sun and rain. When vertical visibility is required, cap models that have been rated for reverse donning can be turned around. This eliminates the shade and rain protection but greatly increases the upwards view. Reverse donning is achieved by reversing the installation of the suspension and wearing the helmet backward.
- **Full Brim Helmets:** Full brim helmets have a fully orbital brim that provides shade from the sun and 360-degree rain deflection. They can also be worn backwards or forwards depending on how the suspension is installed.
- **Vented Helmets:** Vented helmets have a series of ventilation ports usually placed indirectly laterally along the crown protrusion to keep the rain out. Vented helmets are beneficial when operating in high-heat environments. They also provide a level of comfort and coolness when physical exertion causes perspiration and heat. When operating in cold environments or environments that have potential chemical exposure, non-vented versions should not be utilized.
- **Climbing/Rescue Style Helmets:** Climbing/rescue style helmets, which have been popular in sports and European markets for years, have recently become more popular in the U.S. market. These helmets are used when working at heights and in confined spaces. They

feature a built-in, four-point chin strap that ensures the helmet stays on if a fall or impact occurs. The chin strap also prevents the helmet from falling off when working at height and potentially injuring those below. When wearing a cap or full brim style helmet in confined spaces, the brim may get in the way, potentially knocking off the helmet or impeding movement. Climbing/rescue helmets have a very small brim and perform well in confined spaces due to the streamlined styling and chin strap. Cap, full brim, vented, and climbing style helmets each have multiple type and class options outlined in the ANSI Z89.1 standard.

- **Bump Caps:** Bump caps are not covered by the ANSI Z89.1 standard for head protection. They are intended to protect from contact hazards that may result in bumps or small lacerations. These generally come in two styles: traditional bump cap and baseball cap style. Traditional bump caps look similar to cap-style helmets but are made with thinner, more lightweight material that cannot withstand high-level impacts. Baseball cap-style bump caps have an injection-molded shell that is encased in the top of a baseball-style hat. The baseball-style bump cap shields eyes from sun and rain are designed for use in low-risk areas only.

How Do Helmets Protect the Wearer?

A helmet's outer shell helps deflect impact, but the force energy is distributed predominantly through the suspension system. The suspension separates the outer shell from the user's cranium so that the helmet absorbs the impact energy, not the head.

Types of Suspensions

Four-point and six-point are the most common types of suspension systems. Four-point has two straps that connect diagonally to four points on the hard hat. Six-point suspensions have two diagonal straps (like a four-point suspension) plus a third strap which connects to either side of the helmet. Four and six-point suspensions are both deemed acceptable and will pass the ANSI Z89.1 testing. The main difference between them, besides cost, is that six-point suspensions offer protection from top-of-the-head, off-center, and side blows, while four-point suspensions protect from top-of-the-head and side blows.

Suspension System Features

Suspension systems require an adjustable mechanism that secures the helmet to the user's head. Slide lock and ratcheting mechanisms are the two types primarily used. Ratcheting systems are easily adjustable by rotating a knob to attain the desired fit. The size of ratchet knobs varies depending on the manufacturer. When using gloves, it is much easier to adjust suspension fitting with a bigger knob

and adequate grip. Slide lock suspensions, which are more cost-effective, are operated by depressing the tabs while adjusting to the desired fit. Quality and effectiveness of each type of suspension may vary by manufacturer. Having the helmet properly fitted is key to optimal comfort and performance of the helmet.

Understanding the ANSI Z89.1 Standard for Helmets

The ANSI Z89.1 standard currently categorizes two types of head protection with three subclasses. Type One helmets are the most common. Type One classification helmets only protect from force impact and penetration on the crown of the head. Type Two helmets are used in situations where impact or penetration can occur from a blow to the crown and or sides of the head.

Type One and Two Subclasses

Three subclasses apply to both Type One and Type Two helmets: Class E, G, and C. Class E (electrical) rated helmets can take exposure of high voltage conductors up to 20,000 volts. Class E helmets are only rated to protect the head from this level of voltage. Class G-rated helmets



Climbing/rescue style helmets, which have been popular in sports and European markets for years, have recently become more popular in the U.S. market. Image courtesy of Global Glove.

require exposure to be limited to low voltage conductors up to 2,200 volts and only protect the head from voltage exposure. Full brim helmets are predominately Class E and G due to the flat base design and lack of accessory slots. Class C helmets are non-conductive and often come in vented versions, have accessory slots, and are designed to be used with attachable hearing protection. They should not be used in electrical situations.

New and Upcoming Standards

The ISEA (International Safety Equipment Association) is pioneering new standards for bump caps and climbing/rescue style helmets to further clarify proper use. Currently, bump caps are not rated under ANSI Z89.1 standards. The proposed standard will change that. Testing and ratings will be similar to those currently used to categorize tradi-

tional hard hats. The standard will be similar to the EN812 standard, which is the European standard for bump caps, but with some improvements. The ISEA is also pursuing climbing/rescue style helmet standards. The testing will be similar to the current EN14292 European mountaineering standard with more of a focus on protection from falls instead of traditional impact scenarios. These proposed standards are in their infancy but, if adopted, will give clarity and consistency to the use of climbing helmets and bump caps in U.S. workplaces. This will help safety professionals choose the right helmet for the job.

Choosing the Right Helmet

In some instances, the style of the hard hat can be driven by user preference, but in most cases, environmental hazards are the most important considerations to take into account.

Always assess the potential exposure to electrical voltage and the potential angle of impact before choosing appropriate head protection. Possible chemical exposure and weather conditions should also be considered.

There are several style variations and ANSI types and classifications to consider when choosing the right helmet for a hazard. Having a summary knowledge of this information assists EHS professionals in choosing the correct helmet for the job. **CS**

Ryan Corcoran is the Director of Product Management for Bullhead Safety and a Regional Manager for Global Glove and Safety Manufacturing, Inc (www.global-glove.com).

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A tremendous amount of planning needs to take place to identify the correct order of setting out a work zone, which is not identified in the typical. Photo courtesy of Flagger Force.



Going Beyond Typical

BY LUKE LAZAR, CONTRIBUTOR

Work zones are set up and torn down daily in the short-term traffic control industry, which means safety is always priority number one. The tricky part to this everyday occurrence, is that no roadway is the same. And though this industry has an array of standards, trainings, and resources at the federal, state, and local levels—commonly referred to as typicals—it's the traffic control professional's job to adapt to on-the-spot field conditions while complying with this set of standards. This is essential for our commu-

nity's safety and efficient travel.

As safety professionals at Flagger Force, we recognize that compliance with typicals is built on a foundation of human performance. A traffic control professional cannot keep the public safe unless they are working safely themselves. With an intense focus on compliance-based safety from a motorist perspective, it is important to not lose sight of this essential human element of performing short-term traffic control. Of course, we train to the typicals, but we also

focus on this key differentiator to help with those in-field adaptations.

The job of a traffic control professional is not easy. Modifying a work zone successfully to accommodate curves in roadways, special road signage, or unique community features at a fast pace while still adhering to typicals is a challenge. This means professionals are constantly making critical decisions to keep themselves and those around them safe in work zones. They need to apply the typical and then apply a human perspective to make it all work.

What's a Work Zone? Let's Break it Down

The U.S. Department of Transportation Federal Highway Administration acknowledges that there is currently no nationally recognized definition of a work zone. Nearly every state has its own unique way of qualifying a work zone, which comes with unique state-specific typicals. The National Highway Traffic Safety Administration roughly defines a work zone as an area where roadwork takes place that may involve lane closures, detours, and moving equipment. Both organizations describe work zones as areas in which construction, maintenance, or utility work takes place that may include stationary or moving traffic control activities.

We all travel and encounter these areas of roadway activity, sometimes daily. Most of us not even knowing that there are five key areas of a work zone:

- Advance Warning Area: warns motorists of changes to the roadway and provides a positive direction to safely navigate it.
- Transition Area: guides motorists out of their normal travel lane.
- Buffer Area: area of empty space to give an errant vehicle enough time to stop before entering the work area.
- Work Area: where the work is taking place and the vehicles and equipment involved in the work are located.
- Termination: guides motorists back into their normal lane.

With no set definition, these elements are necessary for building a work zone. In addition, we've identified three key factors to safely and successfully designing a work zone with the above components: communication, sequencing, and risk normalization.

Communication

Communication is essential, especially while working on a live job site. Traffic



Work zones are set up and torn down daily in the short-term traffic control industry, which means safety is always priority number one. Photo courtesy of Flagger Force.

control professionals must be able to communicate effectively with the crew, the client, and the traveling public.

To set up and control a work zone properly, there must be a robust understanding of the client's work. Professionals must understand all aspects of their work, such as the number of vehicles involved, type of vehicles involved, whether the work is stationary or mobile, and if the work location will change.

They must also be able to provide firm but courteous direction to motorists to help them safely navigate the work zone. Crew members are often in a position where they are disrupting someone's normal travel pattern and must be adequately trained in conflict resolution.

Further, they need to communicate with each other effectively. Knowing who will do what at each step and being on the same page is critical. This planning, spotting, and coordinating is essential from the smallest flagging operation to the largest scale freeway/expressway operation.

Sequencing

Typicals provide a clear picture of how a work zone should be set up,

it does not provide a clear order of sequencing for how it should be set up. This leads to potential increased exposure to struck-by hazards that can occur during the setup and tear-down process.

For instance, if cones are deployed before advance warning signs are indicated in either direction, motorists may not know that they need to adjust their path of travel, increasing risk to both themselves and the workers.

A tremendous amount of planning needs to take place to identify the correct order of setting out a work zone, which is not identified in the typicals. Each environment is unique and comes with a variety of side streets, bends, turns, etc., that will determine what the final product will look like. The challenge comes from taking the typical application, which essentially shows the work zone on a "perfect" roadway, and sequencing how to execute a compliant work zone step-by-step in various scenarios.

Risk Normalization

Working on the side of the road is a unique experience. The hazards



Modifying a work zone successfully to accommodate curves in roadways, special road signage, or unique community features at a fast pace while still adhering to typicals is a challenge. Photo courtesy of Flagger Force.

are constant and require nonstop vigilance and attentiveness. Upon first experiencing it, the intensity of motorists passing by, sometimes at high rates of speed and at times distracted, is overwhelming.

However, with increased exposure to these environments, professionals are susceptible to becoming accustomed to the hazards, and the risks are normalized, leading some to let their guards down. One can easily lose sight of what could happen and act without thinking through the possibilities. Due to this factor, Flagger Force goes to extraordinary lengths to equip our professionals with the human performance tools to combat that tendency. One such tool can be referred to as a Task Hazard Analysis. This simple yet critical concept has three basic steps:

1. Pause before acting and allow yourself a moment to think about potential hazards.
2. Identify the worst possible negative scenario that could occur because of your action.
3. Take steps to reduce or eliminate the possibility that a negative scenario could occur and proceed from there.

Flagger Force believes that short-term traffic control is not just a job, but an essential career, and it takes the duty to train and develop people into professionals seriously. The job is intense, and the work is challenging. It requires teamwork and watching each other's backs. All steps require careful consideration and a deep sense of care for fellow colleagues and coworkers. Clearly, it takes going beyond the typical. **CS**

Luke Lazar is the Vice President of Risk and Safety at Flagger Force (flaggerforce.com).

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Winds of Change

Building it Safe on a Wind Farm

BY JOHN MYLENEK, CONTRIBUTOR

A wind farm is unlike a conventional project. Instead of constructing a building, plant, or warehouse across tens of thousands of square feet, it consists of constructing wind turbines across dozens – perhaps even hundreds – of square miles. It can make logistics tricky and present difficulties with communication.

Barton Malow entered the Wind Energy market in 2008 and has since established itself as a go-to

builder in renewable energy in the Midwest. We've completed more than 20 wind projects, erected over 500 wind turbines, dedicated more than 1.75 million man-hours to this construction, and we were one of the first Michigan-based contractors to join the 1-gigawatt club in terms of work in place renewable wind energy. (For reference, 1 gigawatt of power is roughly equivalent to 110 million LED bulbs.)

But the sheer size, scope, and the fact that they're outdoors makes them very different when it comes to safety. It all starts with being proactive.

Focused Training

We always start wind projects with craft-specific focused foreman training. We reinforce these packages to stress the importance of safety and ensure it is a core value throughout the duration of the project right from



The heights that we're working on a wind project require a different type of emergency response in the event of the unthinkable. Photo courtesy of Barton Malow Company.

the start. These packages also help us reinforce things like safety when working at heights, navigating overhead power lines, managing pedestrian gawkers, and being alerted to and managing weather-related stoppages.

We start each day on a wind project with a Plan of the Day (POD) meeting consisting of immediate staff, management team members, engineers, and superintendents. These team members then disperse to their respective sites for huddles with their specific crafts. Safety professionals will regularly go out and listen in on these huddles to make sure that the messages we're passing along are reinforced and communicated clearly to the workforce. Between the show of presence and ability to have open dialogue with the project workforce, we're able to ensure messages are getting across effectively.

Crisis Incident Practice

The heights that we're working on a wind project require a different type of emergency response in the event of the unthinkable. To prepare for an emergency, our wind teams participate in high tower rescue classes before every project. We also meet with the local emergency responders to discuss what we've trained for as a team and local response capabilities. It helps us learn how we're able to work together in the event of an emergency.

As part of the coordination with local emergency services, we expect that they will not be able to timely respond to a high-angle rescue situation. Therefore, we currently have nearly a dozen personnel, including staff and trades professionals, that are trained as Authorized Rescuers according to ANSI Z359 to ensure compliance with OSHA requirements for providing prompt rescue of employees in an emergency.

Weekly All-Hands Meetings

On most wind projects, we'll bring

a small stage and PA system onto an area of the project site so we can hold meetings with the hundreds of workers who may be on site on a given day. We do this weekly to discuss issues that may have come up or to proactively discuss things that we anticipate may be a problem or hazard.

Often, we'll include special guests. For instance, on one mid-Michigan project, the local sheriff joined us one week to discuss driving safety to and from the jobsite. Most wind projects are in rural farmland, and corn stalks can grow up to 9 feet tall, limiting visibility on the country roads. Heavy rainfall can also take its toll on the area, flooding the fields that we're working in and the access roads that help us get around.

It's estimated that about 60,000 wind turbines have been constructed throughout the United States – and with an ongoing shift to clean energy solutions, more are certainly on the way. Some industry experts even estimate that renewable energy construction – specifically as it pertains to wind projects – is

projected to increase by 30% every year in the near-term. With more wind farms going up both on- and off-shore, make sure your team knows how to go about building these unique projects safely. **CS**

John Mylenek is a Safety Manager for Barton Malow Company, the automotive, energy, and industrial entity of the Barton Malow Family of Companies (www.bartonmalow.com).



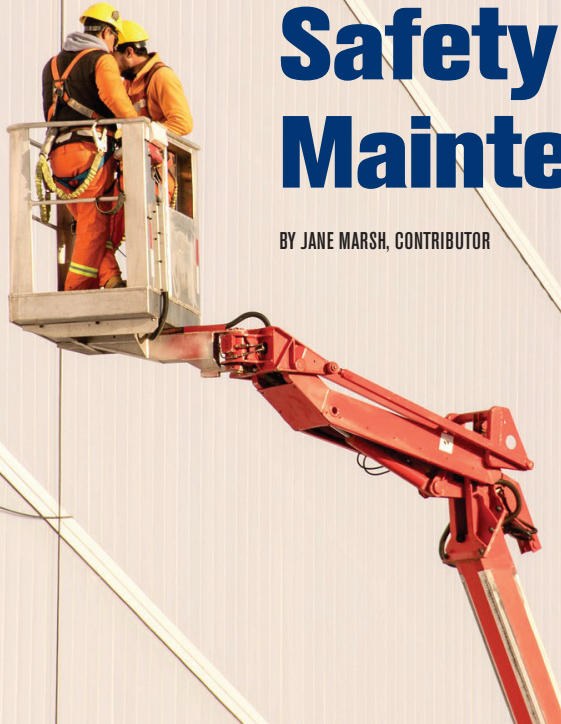
It's estimated that about 60,000 wind turbines have been constructed throughout the United States – and with an ongoing shift to clean energy solutions, more are certainly on the way. Photo courtesy of Barton Malow Company

To learn more about the unique challenges of wind farm construction, listen to Episode 4 of Said Differently – A Barton Malow Podcast. Available on bartonmalow.com/podcast or wherever you consume your podcasts, "Winds of Change," features Ryan Johnston and Curtis Brown from Barton Malow's wind energy team, and Matt Wagner of DTE Energy.

As with any power tools, workers should wear appropriate personal protective equipment when using hydraulic construction tools.

A Quick Guide to Hydraulic Tool Safety and Maintenance

BY JANE MARSH, CONTRIBUTOR



Construction is a hazardous industry. The sector accounts for 20% of all worker fatalities¹ in private industry, but it doesn't have to be dangerous. Steps like ensuring hydraulic construction tool safety can make a substantial difference.

Hydraulic tools are a standard across the industry. In addition to being powerful and durable, they're energy-efficient, and considering construction is responsible for 23% of air pollution², that's hard to ignore. At the same time, the high pressures and energy density of this equipment can make it risky.

To help, here's a quick guide to hydraulic hand tool safety.

Inspect Tools Before Use

Hydraulic construction tool safety starts before the job even begins. Before workers use these tools, they should check their condition to ensure they'll operate safely. For most hydraulic tools, that includes checking for leaks, unusual temperatures, tears, cuts, or knots in the hose.

A leak in a hydraulic system can release fluid close to the muzzle velocity³ of a gun, so workers should check for leaks with another object, not their hands. It's also important to ensure the system is cool before using. If you notice any potential issues, report them immediately and use a different tool.

Always Monitor Tool Pressure and Power

One of the most crucial considerations for hydraulic safety is monitoring pressure. Always keep an eye on pressure gauges during inspections, while using tools, and when maintaining equipment. If you have to release any pressure, secure any moving parts or loads first.

Many of these tools require power units to generate torque⁴, so it's important to check these electric systems as well. Never run a machine while maintaining it, and as an extra precaution, disconnect the equipment from power sources when not in use. Just as workers check hoses and hy-

draulic systems for leaks or damage, they should check electrical cords.

Store Tools Safely

Proper storage is a crucial part of any hand tool safety, but it's especially important with hydraulic equipment. Without secure storage, these tools could get dings, tears, or punctures on the way to and from the worksite, which can be dangerous considering their high pressure. Similarly, their hoses should be neatly coiled and away from sunlight to preserve their integrity.

Always put any hydraulic construction tools up as soon as you're done working with them. You may also consider implementing a lockout/tagout procedure to ensure compliance with these guidelines.

Wear Appropriate PPE

As with any power tools, workers should wear appropriate personal



Construction is a hazardous industry. The sector accounts for 20% of all worker fatalities in private industry.

protective equipment (PPE) when using hydraulic construction tools. What that entails depends on the specific equipment itself, but safety glasses and work gloves apply to

every situation. Eye and face protection is also in the top 10 most common OSHA violations⁵, so it's worth emphasizing this point.

Without reliable PPE, hydrau-

An advertisement for Dunlop MetMAX safety boots. The image shows a black and yellow safety boot with a thick, treaded sole. The boot is positioned on a wooden surface. The background is a dark red wall with a wood grain pattern. Text overlays include the brand name 'DUNLOP® MetMAX' in large white letters, and a red banner with the text 'PERFECT GRIP & TRACTIONS'. Below this, it says 'INDUSTRY LEADING SRC RATED SLIP RESISTANCE'. To the right, a paragraph describes the boot's features: 'Get a grip on slips, trips and falls. Dunlop MetMAX is equipped with an SRC-rated professional outsole and ASTM 3445-21 SR rated slip resistance. This seal of approval supports you in getting a grip on slips, trips and falls.' At the bottom right, it says 'Dunlop. Care beyond Safety.'

One of the most crucial considerations for hydraulic safety is monitoring pressure. Always keep an eye on pressure gauges during inspections, while using tools, and when maintaining equipment.

lic equipment could cause puncture wounds, burns, injuries related to flying debris, or more. Safe usage will reduce many risks, but these potential injuries are too severe to ignore PPE.

Train Everyone Thoroughly

Finally, team leaders should ensure that everyone goes through thorough training on hand tool safety. Everyone who uses one of these tools should know how to operate them safely, as well as proper lockout procedures. Those who don't use them should still know what risks they

pose to encourage them to steer clear.

Workers should pass basic safety quizzes before using these tools. Periodic refresher training is also important, as it ensures no one forgets these steps or becomes complacent.

Hydraulic Construction Tools Demand Care and Attention

Hydraulic construction tools are some of the most helpful equipment on the worksite, but they can be hazardous. They demand your careful attention to avoid injury.

When everyone understands

the risks these tools pose and how to avoid them, they can experience their benefits safely. Without thorough safety training and procedures, these tools may become more dangerous than helpful. **CS**

Jane Marsh is an independent writer who covers topics in green technology and manufacturing. She also works as the Editor-in-Chief of Environment.co.

1. <https://www.osha.gov/data/commonstats>
2. <https://environment.co/renewable-energy-construction/>
3. <https://www.forconstructionpros.com/equipment/fleet-maintenance/other-components/article/10292239/think-safety-when-it-comes-to-maintenance-of-hydraulic-systems>
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Does Your Fall Protection Fall Short?

Just as easily as fall protection can put money in your pocket, omitting it can destroy your bottom line.

CONTRIBUTED BY BUILDERS MUTUAL

When it comes to fall protection, don't wait until you need it to use it. Here, experts at Builders Mutual provide a quick Q&A session to ensure your fall protection is prepared to save lives on your jobsite.

What does a complete fall protection plan look like?

Fall protection is more than a harness. Sure, that's often the first piece of personal protection equipment (PPE) that comes to mind, but don't forget that falls can happen anywhere on the jobsite, not just from a roof or top plate.

When consulting with contractors, we ask them to think about fall protection much more broadly. Fall protection includes reviewing ladder usage and maintenance, as well as mitigating the hazards of unguarded openings like windows, doors, or the floor. Fall protection even incorporates proper scaffolds and scaffold erection.

In fact, fall protection continues long beyond the time when the last worker leaves the jobsite for the day. Third-party jobsite visitors have an increased risk of even simple slip-and-trip hazards that contractors easily avoid by experience.

How should you enforce your fall protection plan?

Simply put, use it! No harness lying unused in a bag or container in your trailer is going to prevent a fall or save a serious injury.

Half the battle is buying the fall protection kit, but the other critical half is using it properly. Are your team members receiving proper training, then being reviewed on how they use it? PPE inspections can help drive home the message that fall protection is not optional, it's mandatory.

OSHA standard or not, workers can always make the choice not to use fall protection. Your endorsement is key to getting the buy-in of your workers. If they're not convinced it's to their advantage to use fall protection, the kits serve no purpose.

How could fall protection impact a company's bottom line?

The more secure workers feel working at heights, the less hesitant they'll be. That productivity translates to profitability. Adjust the harness, secure yourself properly to the attachment point, and get the job done.

Just as easily as fall protection can put money in your pocket, omitting it can destroy your bottom line. Our Builders Mutual expert explains, "The loss of an experienced employee due to an accident for any period of time will have a direct impact on your completion schedule and profit margin. You'll undergo additional expenses due to hiring, screening, and training of a replacement." Needless to say, morale takes a hit that is even harder to quantify.

The effect on the bottom line doesn't end there. Your safety strategy directly links to your insurance costs, too. When your experience mod, a factor which contributes to the overall price of your workers' compensation premium, goes up, so does your insurance premium. On the bright side, minimizing your losses can trend your experience mod down and help decrease your premium.

Even better, our expert notes, "Keeping your loss history clean helps you create a situation where insurance companies compete for your business. That drives your rates down."

The takeaway?

No alarm sounds before you lose your balance and reach for a hand-rail that's never been constructed. No flashing lights announce that you need to wear your harness the day that loose shingles cause you to slip off the roof. Even so, countless contractors take their chances. Keep sound fall protection tactics in place at all times, and you'll turn a "close call" into "no problem at all." **CS**

Written by the experts at Builders Mutual, with support from the Job-Site Safety Institute. Headquartered in North Carolina, Builders Mutual is one of the Mid-Atlantic and Southeast's leading writers of commercial insurance for the construction industry. The company provides coverage to more than 27,000 policyholders through more than 5,000 sales agents and employs more than 380 staff at its Raleigh headquarters (www.buildersmutual.com). Founded by Builders Mutual, the Job-Site Safety Institute (JSI) is a nonprofit 501(c)(3) organization. This research and educational organization is dedicated to eliminating all job-site related injuries and deaths in the construction industry (www.jsisafety.org).

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Soon It Will Be Summer: The Forecast Calls for a New OSHA Heat Standard

BY ROBERT LAHEY, CONTRIBUTOR

Springtime will soon give way to a sweltering summer in most of the country. A dramatic reminder of the consequences of heat stress are the hundreds of lives lost throughout the Pacific Northwest last year as a result of a two-week period of record-breaking high temperatures.

As the Earth's climate continues to warm, heat waves are becoming more frequent and more severe. Employers and employees — in both outdoor and indoor environments — should be concerned.

The National Oceanic and Atmospheric Administration (NOAA) cites heat as the leading cause of weather-related deaths since 1990 — five times deadlier than cold weather, three times deadlier than hurricanes, and twice as deadly as tornadoes.

This phenomenon is not likely to change anytime soon. However, heat-related illnesses and fatalities in the workplace are preventable. It requires an effective health and safety plan to:

- Identify on-the-job hazards
- Correct or reduce risks
- Train workers about protections
- Prepare for first aid
- Plans for emergency response

The need for these preventive measures is shared by government officials, as well. In October 2021, the Occupational Health and Safety Administration (OSHA) published an *Advance Notice of Proposed Rulemaking for Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings*.

Currently, a heat-specific standard does not exist to protect millions of workers from exposure to hazardous conditions. A public comment period that concluded in January 2022 was intended to obtain information about “the extent and nature of hazardous

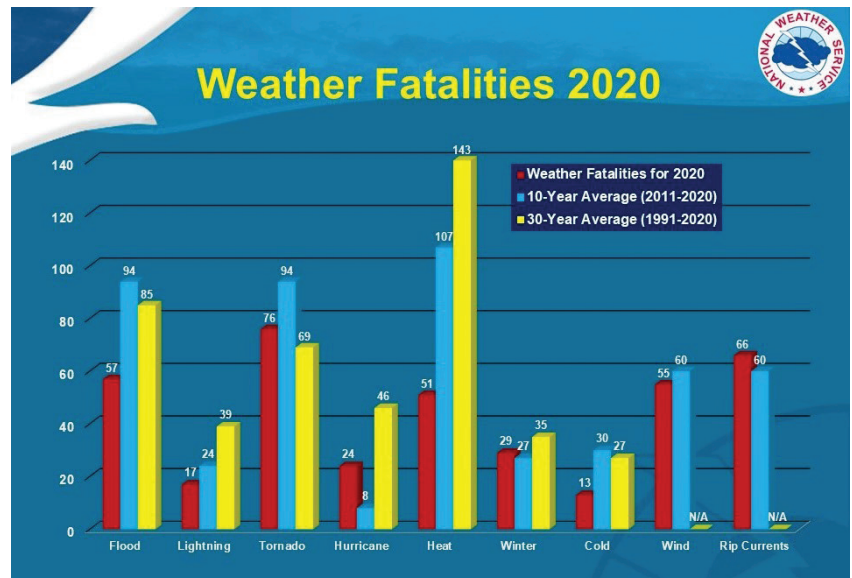


Image courtesy of www.weather.gov/hazstat.

heat in the workplace.” The timeline for next steps has not yet been announced.

In the meantime, however, OSHA has instituted a heat-related enforcement initiative and plans to issue a National Emphasis Program (NEP) for heat-related safety efforts later this year.

All of these actions represent a national commitment to the development of a permanent federal rule and the implementation of other means to increase awareness about the dangers of heat.

Employers do not need to wait for direction from Washington, D.C. in order to take actions that are in the best interest of employees. The risks are real, as evidenced by the nearly 400 workplace fatalities and additional 35,000 injuries and illnesses attributed to workplace heat stress during the past decade. Furthermore, the time is right, with summer months now on the horizon.

Excessive temperatures can cause heat stroke, and even death, if an employee is not treated properly. Such conditions also make worse existing health problems, such as asthma,

kidney failure, and heart disease.

Construction workers are at higher risk, but the problem affects all who are exposed to extreme heat — including persons working indoors in a non-climate-controlled environment.

The most common strategies for protecting workers include:

- Providing sufficient water, rest, and shade.
- Allowing new or returning employees to gradually increase their workloads and take more frequent breaks in order to build tolerance for the heat.
- Monitor all workers for any signs of illness.
- Train on prevention, but plan for emergencies.

Indeed, ‘tis the season for adopting a proactive approach to this known health hazard. **CS**

Robert Lahey is the President & CEO of Chicagoland Construction Safety Council (www.buildsafe.org).

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How the A10 Standards Can Help Improve Construction and Demolition Safety

A Q&A with the American Society of Safety Professionals.

A10 is at the forefront of addressing hazards in a variety of subsets of the construction industry.



Construction and demolition sites can expose workers to a wide range of hazards that can lead to serious injuries and fatalities. The ANSI/ASSP A10 series of voluntary consensus standards provides safety requirements to help address these hazards. Tim Fisher, Director of Standards Development and Technical Services for the American Society of Safety Professionals (ASSP), joins us to answer some frequently asked questions about the A10 standards.

Can you give us some background on the A10 committee?

A10 is one of the oldest committees under the American National Standards Institute (ANSI) dating back to the 1920s. The first A10 standard was written in 1943. With more than 1,000 members and 50 subgroups, A10 is also one of the largest standards-writing committees in the United States.

It's comprised of four main

interest categories:

- First are the large construction companies, large contractors, and contractors' associations.
- Second are labor unions including almost every major union whose members perform construction and demolition operations.
- Third, is general interest groups that include a variety of government agencies and some universities.

- Fourth is large engineering companies and consulting organizations.

A10 standards represent the biggest compendium of consensus standards anywhere in the world addressing occupational safety and health for construction and demolition operations. These standards are currently used in more than 70 countries to help prevent worker injuries and fatalities.

What role does ASSP play in the facilitation of these standards and how they are developed?

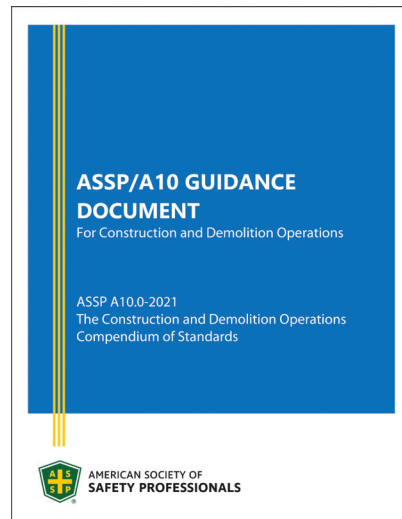
ASSP is the secretariat for the A10 standards committee. We manage the committee to ensure it follows the accredited procedures to write standards that are based on good science and sound technology. We make sure the standards development process is conducted in a transparent way that is fair and unbiased so that the standards are credible and valuable to the construction and demolition industry.

How are standards topics chosen by the A10 committee?

The A10 committee canvasses our entire membership at our bi-annual meetings to bring topics, issues, and concerns facing our industry to the forefront. The committee then votes on a topic and if it passes, we request an individual to sponsor the topic, choose a group to work with, and create a white paper. ASSP as an organization then approves the project and launches the initiative with public notice and call for comments. If the proposed standard is approved, we then proceed with creating the standard.

Why should safety professionals use A10 standards?

Safety programs that incorporate



written policies and procedures are key to developing and maintaining an effective and efficient safety culture. The A10 series of standards covers safety requirements for a whole host of construction and demolition activities. Following the ANSI standard development process, these standards are revised or reaffirmed every five years. This process and procedure keeps the A10 standards current and having positive impact on the construction and demolition industry. Using the technical information and guidance found in A10 standards, safety and health professionals can develop their own comprehensive program that includes policies and procedures that represent industry best practices and go beyond regulatory compliance.

A10 standards encompass so many different construction and demolition tasks. Can you give us a brief overview of the different types of work and tasks covered by these standards?

A10 is at the forefront of addressing hazards in a variety of subsets of the construction industry. Some of these hazards include scaffolding collapses, hearing loss, falls from height, and trench cave-ins. The A10 series of

standards provide much more up-to-date and technically specific safety and health operating practices than other regulatory standards that may not address due to technical and technological changes over time. There are standards also created to address safety in niche areas like masonry, wind turbine facilities, telecommunications towers, and highway construction safety.

ANSI/ASSP A10.47-2021, Work Zone Safety for Roadway Construction, is specific to the hazards of road construction. This standard has been around for a while, but recently was revised to ensure best practices are incorporated. This includes guidance on developing traffic control plans, implementing protective safety measures, improving worker visibility, and creating an emergency response plan.

What A10 Standards apply to construction and demolition safety management?

We receive this question often. This is likely because requests for proposals (RFPs) may require that the successful bidder have a safety management system for large-scale construction projects. These A10 standards provide OSH management guidance.

- **ANSI/ASSP A10.1-2018** Pre-Project and Pre-Task Safety and Health Planning for Construction and Demolition Operations, will help you set priorities and create a plan for a project.
- **ANSI/ASSP A10.33-2020**, Safety and Health Program Requirements for Multi-Employer Projects, addresses the complexities of the contracting environment and sets administrative structure for the project to provide a safe and healthful work environment where multiple employers are or will be engaged.
- **ANSI/ASSP A10.38-2021**, Basic Elements of an Employer's

A10 is at the forefront of addressing hazards in a variety of subsets of the construction industry. Some of these hazards include scaffolding collapses, hearing loss, falls from height, and trench cave-ins.

Program to Provide a Safe and Healthful Work Environment, aims to help employers provide a safe work environment.

- **ANSI/ASSP A10.39-1996 (R2017)**, Construction Safety and Health Audit Program, establishes an internal method of measuring compliance with an organization's written safety and health program require-

ments. Using this standard will help you gauge the effectiveness of your program.

Which A10 standards would you recommend to a new safety professional or someone new to the construction and demolition industry?

These foundational standards are good for every safety professional to

have in their toolbox. These standards will help you develop a site-specific safety plan that can then be published and communicated to all workers, sharing best practices with everyone involved with the project.

- **ANSI/ASSP A10.6-2006 (R2016)** Safety and Health Program Requirements for Demolition Operations, specifically addresses how to prevent damage to property and how to protect the public during demolition operations.
- **ANSI/ASSP A10.7-2018**, Safety and Health Requirements for Construction and Demolition Use, Storage, Handling and Site Movement of Commercial Explosives and Blasting Agents, is another good standard for everyone to have. You might not use it often, but it's important to know these best safety practices when you have the need.

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- **ANSI/ASSP A10.25-2017**, Sanitation in Construction, describes how to create a healthy work environment.
- **ANSI/ASSP A10.26-2011 (R2016)**, Emergency Procedures for Construction and Demolition Sites, explains emergency information in a user-friendly way, making it easy to communicate the procedure to workers.
- **ANSI/ASSP A10.34-2021**, Protection of the Public on or Adjacent to Construction Sites, is a recently updated standard that addresses situations like high-rise construction sites where you need to have a plan that protects the public from the hazards of your job site.
- **ANSI/ASSP A10.49-2015** Control of Chemical Health Hazards in Construction and Demolition Operations, focuses on hazards you can't see. It

contains state-of-the-art guidance that will help you protect workers.

How does someone join the A10 committee and get involved in the standards development process?

Visit assp.org/standards to apply online. It's important to note that committee members represent their organization and not an individual viewpoint. We will start by getting you involved with a subgroup to work on the technical content of a document. From there you can move to a main committee. It takes some time and effort, but it is not a particularly difficult process. Contact us and we will get you started.

Any closing comments?

Yes, use the A10 standards. They incorporate the most current accepted safety and health practices.

Implementing these standards will help move your occupational safety and health programs forward to keep construction and demolition workers safe. **CS**

Tim Fisher, CSP, CHMM, CPEA, ARM, FASSP, is Director of Standards and Technical Services with the American Society of Safety Professionals (ASSP). Fisher holds an M.S. in Industrial Management-Safety and Industrial Hygiene from Northern Illinois University, an M.A. in Public Administration from University of Illinois-Chicago and a B.A. in Management from the University of Maryland.

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Protective Footwear Standard – ASTM F2413-18

Standard Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear

In the workplace, feet can have heavy objects fall on them, trapped between objects or caught in a crack. Vehicles can roll over them and heavy objects can fall on them. Bulldozers, lift trucks, pallets, chain saws, unguarded machinery, loose nails and sharp nails are just a few of the things that can pose a danger to feet and cause injuries ranging from punctures and severed toes, to broken bones and electric shocks. Hazards exist in a variety of industries, including warehousing, logging, manufacturing, transportation, waste management and construction. According to the Bureau of Labor Statistics, each year there are more than 53,000 foot injuries in U.S. workplaces that cause employees to miss work. Some result in permanent disability. Protective footwear – along with job design and/or workplace design – is an important means of preventing occupational foot injuries.

ASTM F2413-18 covers the minimum design, performance, testing and classification requirements, and prescribes fit, function and performance criteria for footwear designed to be worn to provide protection against a variety of workplace hazards that can potentially result in injury. It does not serve as a detailed manufacturing or purchasing specification, but it can provide a reference for purchasers that foot protection meets minimum performance requirements are met.

Major Provisions

Footwear conforming to ASTM F2413-18 must meet the following provisions of the standard:

- Impact resistance for the toe area of footwear – When sub-



- jected to a 75-pound force, the toe area must provide a minimum interior height clearance of 0.5 inches in men's footwear and 0.468 inches in women's footwear.
- Compression resistance for the toe area of footwear – When footwear is subjected to a 2,500-pound force, the toe area must provide a minimum interior height clearance of 0.5 inches in men's footwear and 0.468 inches in women's footwear.
- Metatarsal protection that reduces the chance of injury to the metatarsal bones at the top of the foot.
- Conductive properties which reduce hazards that may result from static electricity buildup and reduce the possibility of ignition of explosives and volatile chemicals.
- Electric shock resistance – the boot shall withstand 18,000 volts at 60 HZ for 1 minute with no current flow or leakage current in excess of 1.0 milliamperes under dry conditions.
- Static dissipative (SD) prop-

erties to reduce hazards due to excessively low footwear resistance that may exist where SD footwear is required.

- Puncture resistance of footwear bottoms.
- Chain saw cut resistance.
- Dielectric insulation

The standard specifies that controlled laboratory tests used to determine compliance with the performance requirements of this specification shall not be deemed as establishing performance levels for *all* situations to which individuals may be exposed.

About the ASTM marking

Footwear that is manufactured to the ASTM specification must be marked with the specific portion of the standard with which it complies. The marking must be enclosed in a rectangular border. Each protective toe cap, metatarsal and puncture-resistant device must be marked with the manufacturer's name, trademark or logo. If any changes are made to the original components of safety toe footwear (such as replacing or adding

after-market footbeds/inserts) that could cause failure, that could render the ASTM marking invalid.

NOTE: The standard does not apply to overshoes with safety toe caps or strap on devices with safety toes.

Tips for choosing protective footwear

- Buy shoes or boots late in the afternoon, when feet will be swollen to their largest size.
- Have both feet measured because feet may differ in size; buy shoes to fit the larger foot.
- Do not buy tight-fitting shoes and expect them to stretch with wear.
- Make sure the shoes grip the heels firmly.
- Select shoes and shoe materials based on the hazards to which you will potentially be exposed. Keeping flooring conditions in mind as well, in order to prevent

slip and fall accidents.

- Footwear must be comfortable.

Combined Protection

Identifying potential hazards in the workplace or in specific applications will provide the information needed to choose effective foot protection. Many safety footwear styles have features and materials that protect the wearer from a number of different hazards. In addition to the provisions contained in the standard, footwear may also offer chemical resistance from oils, acids and chemicals; waterproofing; slip resistant outsoles; insoles designed to absorb moisture and shock and fire resistance. Some manufacturers have developed anti-fatigue product lines that are lighter in weight, and heels that are beveled to reduce back and leg strain. When shopping for safety footwear, make sure that the products meet the standards.

More information

ASTM F2413-18 was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

To purchase the standard:
<https://www.astm.org/f2413-18.html>

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Occupational and Educational Eye & Face Protection Devices – ANSI/ISEA Z87.1-2015

Important to Know:

ANSI/ISEA Z87.1-2015 sets forth criteria related to the general requirements, testing, permanent marking, selection, care and use of protectors to help minimize the occurrence and severity, or prevention of injuries, from hazards like impact, non-ionizing radiation and liquid splash exposures. This applies to both occupational and educational environments, including machinery operations, material welding and cutting, chemical handling and assembly operations, and others, according to ANSI.com.

The standard includes information that can assist in making informed decisions in selecting appropriate eye and face protection, such as the “Selection Guide” and “Protector Markings” tools.

Standard Requirements:

ANSI/ISEA Z87.1-2015 requires



markings on eye protection that directly relate to the ability of the eye protection device to defend against specific hazards. If the eye protection is ANSI/ISEA Z87.1-2015-compliant, it will be marked (or etched) with Z87; must clearly indicate the manufacturer; and any additional markings to identify impact, dust, optical radiation and splash protection. Splash marks are not applied to lenses—they are on frames only.

Working with Chemicals - ANSI/ISEA Z87.1-2015 provides a test methodology and marking for “splash protection” (D3) on eye/face protectors. The standard does not specifically address protector perfor-

mance against chemicals, including when splashed, because there are thousands of chemicals and hundreds of complicating environmental factors making the assessment of specific chemicals as part of the standard nearly impossible.

Optical Radiation - Understanding the dangers of optical hazards and the risks arising from the intensity and length of exposure time to optical radiation is critical when working indoors or outdoors. The most common radiation workplace hazards are:

- **Glare** – Bright, visible light generated from sources such as lamps, welding arcs or furnace operations; and outdoors—where direct or reflected sunlight is present. High levels of visible glare may cause discomfort and could impact visual clarity.
- **Ultraviolet** – Also known as UV, it is present in welding operations and is emitted from industrial lamps used for curing and sanitation purposes. UV energy can

Did You Know?

This standard was developed by the Z87 Committee on Safety Eye and Face Protection, which is administered by ISEA and approved by ANSI. Safety eyewear conforming to the standard is used in the U.S., and the standard is incorporated into OSHA regulations for PPE.

Providing adequate training for all supervisors and workers who require eye and face protection is crucial to ensuring worker safety. OSHA estimates that 90% of eye injuries can be prevented through the use of proper protective eyewear. Those who were injured while

not wearing protective eyewear most often said they believed it was not required for the situation, or that they had received no information on where eyewear could be found and what kind of eyewear should be used.

The following is a suggested list of training objectives. Training should be site-specific and may need to cover more topics than are listed below:

- Recognize the hazards, environmental and other workplace factors, such as those described in the Haz-

- ard Assessment section
- Proper selection, fit and use of eye and face protectors for each application
- Inspection and maintenance of eye and face protectors
- How and where employees can obtain protective eyewear
- Where to get replacements and what to do if eye protection is missing from a workstation
- Manufacturer's instructions, warnings, cautions and equipment limitations should

- be reviewed and understood by the employees
- Always maintain PPE according to the manufacturer's requirements

Devices or lenses need to be replaced if all or part of the plastic looks cloudy; has lost its gloss; has droops; is crazed or marked by tiny cracks; or seems distorted. Chemical degradation can embrittle plastic and reduce impact protection. Replacement of the device or lenses should be immediate upon failing inspection or after impact.



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initiate photo-chemical reactions in the eye, and short-term effects can be "sun burn" of the cornea.

- **Blue Light** – The blue/violet portion of the visible light spectrum adjacent to the UV. It is transmitted through the eye, where long-term damage could occur with frequent exposures.
- **Infrared (IR)** – This is invisible, long-wavelength radiation that is typically experienced as heat energy from sources such as welding arcs, radiant lamps, ovens and furnaces; or accidental discharges of energy from electrical equipment.

Lasers and Electrical Safety -

Other settings and workplaces where optical radiation hazards are present include operations with lasers or servicing of electrical equipment. These applications are outside of the scope

of ANSI/ISEA Z87.1-2015.

Working with Molten Metal - Working around molten metal involves exposure to heat and, often, optical radiation, such as infrared (IR) and UV. When working near molten metal, the use of face protection, preferably in conjunction with appropriate eye protection, is recommended.

Working in Humid and/or Abrasive Environments - Three important barriers to eyewear PPE usage include lack of comfort and fit, fogging and scratching. While comfort and fit are subjective based on facial size, contour, nose bridge, etc., both antifog (AF) and anti-scratch (AS) performance is measurable. Fog forms on a surface when water vapor in the air condenses in fine droplets. A good anti-fog coating should prevent the formation of such droplets, but not all anti-fog coatings are the same.

Working Around Electricity -

Under conditions where an arc flash may occur, PPE categories have been established that indicate the type of PPE needed, as well as what protection level is required (and to which it must perform). Eye and face protector performance against arc flash is specified in NFPA 70E, Standard for Electrical Safety in the Workplace.

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