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CONSTRUCTION SAFETY HANDBOOK

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Addressing the Heavy Toll of Overexertion

Overexertion injuries, particularly musculoskeletal disorders (MSDs), remain a significant challenge in the construction industry. These injuries, often caused by lifting, pushing, pulling, and carrying heavy materials, lead to lost workdays, increased workers' compensation costs, and long-term health issues for workers. Fortunately, there are resources available to help employers and workers address this issue.

How serious are overexertion injuries? Consider these statistics:

- According to the Bureau of Labor Statistics, there were 33,200 nonfatal MSDs in construction in 2021-2022 that resulted in days away from work.
- Construction workers with MSDs are three times more likely to use prescription opioids than those without MSDs, increasing the risk of long-term health complications, the CPWR-The Center for Construction Research and Training reports.
- The median number of days away from work due to MSDs increased from eight days in 1992 to 13 days in 2017, reflecting longer recovery times, according to the BLS.

Fortunately, you can find valuable, no-cost resources from CPWR:

- Best Built Plans (BBP) – Free tools to help contractors and workers reduce manual materials handling risks.
- Interactive Training & Coaching Resources – This covers safe lifting techniques, planning lifts, and warming up before handling materials.
- Supplemental Resources – This includes lift planning guides, infographics, and hazard alerts in English and Spanish.

To learn more, check out *Preventing Overexertion Injuries by Reducing Manual Materials Handling in Construction*, a webinar *OH&S* hosted with CPWR's Data Center Director Amber Trueblood, MPH, DrPH, and Research Analyst Grace Barlet, MPH, CPWR, in which they discuss strategies for reducing MSD risks in construction. **OHS**

DAVID KOPF
Publisher & Executive Editor, *OH&S* Magazine

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CONSTRUCTION SAFETY HANDBOOK
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REACHING THE STAFF

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7 Steps to Industrial Safety Compliance

A periodic check to make sure you're covering all the safety bases is an effective way to fill in the gaps.

BY MAGID SAFETY STAFF WRITER

You know your safety basics and you have plans and policies in place. But a periodic check to make sure you're covering all the bases is an effective way to fill in gaps you may be missing. Here are eight safety principles to keep in mind for industrial safety compliance.

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1. Safety Training

Sitting your workers in front of another slide presentation can turn class time into nap time. Be sure to liven up your safety training and remember the Three Types of Learning:

- Auditory Learning (hearing)
- Visual Learning (seeing)
- Tactile Learning (touching)

Are your classes getting stale? Try some of these training tips from other safety managers:

- **Engaging Safety Reminders** – Use creative tools like ping pong balls with eyes to promote safety gear compliance.
- **Simplified PPE Selection** – Reduce glove options to ensure workers use the correct protection for specific tasks.
- **Drive PPE Engagement** – Encourage workers to take their PPE home with them so they can implement their safety training outside of work

2. Keep a Healthy Safety Culture

A healthy safety culture has everyone rowing in the same direction, from the top down. Make sure you're including everyone in making safety a core value.

- Do your workers know that rule-bending isn't allowed?
- Do you set a personal example? Workers tend to follow your lead.
- Do you have regular safety meetings to keep safety top-of-mind?

3. Post Safety Reminder Posters

Proper signs and labels serve as important daily reminders for even the most experienced workers.

- Have you looked around your facility to ensure that reminders aren't getting lost?
- Are there opportunities for reminders that you're missing?
- Are there places you might add and even rotate workplace safety posters to keep workers reading fresh advice?

LEARN MORE:

Visit Magid's Safety Matters Resource Center for free safety tips and downloadable tools:

www.magidglove.com/safety-matters/resource-center.

4. Give Employees the PPE They Need to Succeed

Don't forget the last line of defense – PPE! New designs and materials are being developed every day. Do your workers need:

- Cool, comfortable gloves for hot environments?
- Gloves for extreme cut hazards?
- Cooling products for the whole body?
- Arm protection for cut hazards?
- Lighter weight gloves that protect like heavyweights?
- Prescription eyewear?
- PPE for extreme environments?
- Hi-Viz gloves, sleeves, or clothing?

5. Provide Regular Maintenance on All Machines

- The most careful worker may get injured in a machine malfunction. In fact, machine entanglements alone account for almost 34,000 workplace injuries each year.
- Is your machine maintenance up to date? Check your schedules for regular cleaning, service, and inspection.
- Make sure your workers are well-trained on lockout/tagout and that you're using the latest technologies.

6. Look Out for the Big 3 – Slips, Trips and Falls

- Be sure to train your workers to avoid these common hazards. Messy or crowded work zones lead to unnecessary accidents.
- Do you take regular walks through your facility to make sure spills are cleaned up, pathways are clear of clutter, cords aren't tangled, and machines are locked and guarded?
- Do you encourage your workers to speak up when they see a problem?

7. Celebrate Your Safety Success!

Finally, if you've got it all covered, celebrate the achievement, and keep it going! Here are some great ways to keep workers engaged and make safety compliance fun and easy to remember:

- **Interactive Safety Games** – Use activities like "safety bingo" or scavenger hunts to make learning engaging.
- **Short, Engaging Videos** – Reinforce key safety messages with quick, memorable video clips.
- **Real-Life Case Studies** – Share real incidents to highlight the importance of safety compliance.
- **Peer-Led Training** – Involve experienced workers to share insights and make training more relatable. **OHS**

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Understanding Fall Clearance in Occupational Safety

Fall clearance is a fundamental element of fall protection systems.

BY GIOVANY GIL

Fall clearance is a critical factor in ensuring occupational safety, particularly in industries where workers are exposed to heights. Proper fall clearance calculations can prevent serious injuries and fatalities, making it an essential aspect of any fall protection plan. This editorial examines the importance of understanding fall clearance.

Defining Fall Clearance

Fall clearance is defined as the minimum vertical distance required between the worker and the next lower level to ensure that, in the event of a fall, the worker does not hit the ground or any obstructions. Proper calculation of fall clearance involves considering various factors, including the type of fall protection equipment used, the height of the anchorage point, and the nature of the application in question.

Key Variables in Fall Clearance Calculations

Anchor Height. Anchor height plays a pivotal role in fall clearance. The anchorage position is ideally placed right above and vertically to the head of the user to minimize clearance requirements. This placement ensures that the free fall is minimized, reducing the risk of injury.

Lateral Edge Distance (LED). The lateral edge distance refers to the horizontal distance between the worker's position and the edge over which a fall may occur. As the LED increases, so does the fall clearance requirement. This is because a greater lateral distance increases the potential for a swinging motion, commonly known as a swing fall, which will increase the overall free fall distance proportionally to LED increase.

Set-Back Distance (SBD). The set-back distance is the distance from the anchorage point to the edge. For leading edge (aka sharp edge) applications, the minimum set-back distance must be adhered to, ensuring that the lifeline does not come into contact with sharp edges during a fall unless a rated connecting device with edge rating is installed. This precaution is necessary to prevent the lifeline from being cut or damaged, which could compromise the fall protection system. It is critical to use the proper device for any potential foot-level connection in the workplace, and most importantly, when sharp edges are present during the application.

LEARN MORE:

Miller Fall Protection has been helping keep workers at height safe for over 80 years. Learn more about the ABC's of Fall Today.

https://tinyurl.com/4zma89d7

Overhead and Leading Edge Applications

Overhead Applications. In overhead applications, the anchorage point is situated above the worker, which is the preferred configuration for minimizing fall clearance. The required fall clearance distances are based on various anchor heights and lateral edge distances. For instance, with an anchor height of 10 feet and a lateral edge distance of 6 feet, angles above 30 degrees are not recommended or must be supervised by a Qualified Person as defined by OSHA.

Leading Edge Applications. For leading edge applications, where the worker may be anchored below dorsal D-Ring in the harness, the fall clearance requirements are more stringent. There are necessary fall clearance distances for different set-back and lateral edge distances. For example, with a set-back distance of 4 feet and a lateral edge distance of 3 feet, in foot level scenarios, shorter Set Back distances combined with longer Lateral Edge distances would create the most dangerous scenarios.

Special Considerations for Body Positions. The position of the worker's body during work tasks affects the fall clearance calculation. There are additional clearance requirements for non-standing positions. For instance, if the worker is kneeling or lying down, an additional fall clearance consideration is required. This adjustment accounts for the lower starting position of the worker's body, ensuring adequate protection in the event of a fall to protect the user from any potential contact with a lower level or obstacle.

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Importance of Accurate Fall Clearance. Accurate fall clearance calculations are vital for the effectiveness of personal fall protection systems. Inadequate clearance can lead to catastrophic outcomes, including severe injuries or fatalities. Therefore, it is crucial for employers and safety professionals to meticulously calculate and adhere to the specified fall clearance requirements to safeguard workers' lives. The best practice is to consider manufacturer's literature about clearance for the specific device purchased. It is known that different types of devices, brands, and configurations would deliver different clearance outcomes that shall be considered for any clearance requirement calculation.

Conclusion

Fall clearance is a fundamental element of fall protection systems, essential for preventing injuries and saving lives. By understanding and implementing recommended guidelines, safety professionals can help ensure that workers are adequately protected in various fall scenarios. Proper education and training on fall clearance calculations can significantly enhance workplace safety, fostering a culture of vigilance and protection. **OHS**

Giovany Gil is a Sr. Advanced Mechanical Design Engineer for Miller Fall Protection and serves as a member representative on ANSI and CSA committees for Fall Protection.

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The Ounce of Prevention

Fire extinguisher training plays a pivotal role in preventing minor incidents from escalating into catastrophic disasters.

BY MATT GARDNER

Fire emergencies can arise in any environment, from manufacturing facilities to office spaces, military bases, and large-scale public venues. Ensuring that employees are adequately trained to handle fire extinguishers is paramount for the following reasons:

1. Industrial and Business Environments: Fires in industrial settings, where hazardous materials and heavy machinery are present, can spread rapidly. Well-trained employees can mitigate risks and prevent widespread destruction.

2. Military and Law Enforcement: Fire incidents in high-risk operations or facilities containing volatile materials require personnel to be proficient in fire response to maintain security and operational efficiency.

3. Hospitals, Schools, and Public Buildings: These locations house large populations and essential infrastructure. Quick and effective fire suppression training is critical in these environments to protect lives and maintain operational continuity.

4. Event Locations: High occupancy venues make fire safety preparedness crucial. Staff must be trained to act swiftly to avoid panic and ensure safe evacuation.

Hands-On Fire Extinguisher Training

While theoretical knowledge is valuable, hands-on training provides the necessary experience to react effectively in real-life situations. Practical training enhances an individual's ability to:

- **Develop Muscle Memory:** Physically handling an extinguisher builds confidence and familiarity with its operation, making it easier to respond quickly in an emergency.
- **Understand the PASS Method:** Hands-on training reinforces the Pull, Aim, Squeeze, and Sweep (PASS) method, ensuring users can effectively discharge an extinguisher when needed.
- **Assess Fire Situations:** Live training scenarios teach individuals how to recognize when a fire can be safely extinguished and when evacuation is the best option.
- **Enhance Decision-Making Skills:** Training under simulated conditions reduces hesitation and improves decision-making in high-pressure situations.

LEARN MORE:

To learn more about how hands-on training and advanced simulation tools can help organizations ensure their personnel are prepared to handle fire emergencies efficiently, visit **www.lionprotects.com/quickfire.**

Fire Classification & Extinguishers

Understanding different classes of fires is essential for selecting the appropriate extinguisher type. Misinformation or improper extinguisher use can worsen a fire, leading to dangerous outcomes. The major fire classes include:

- **Class A:** Ordinary combustibles (wood, paper, fabric). Use water, foam, or multipurpose dry chemical extinguishers.
- **Class B:** Flammable liquids (gasoline, oil, grease). Use foam, CO_2, or dry chemical extinguishers.
- **Class C:** Electrical fires. Use CO_2 or dry chemical extinguishers to avoid electrical conductivity.
- **Class D:** Metal fires (magnesium, titanium). Requires specialized dry powder extinguishers.
- **Class K:** Cooking oils and fats. Use wet chemical extinguishers, especially in commercial kitchens.

Training programs should emphasize proper extinguisher selection to ensure users respond correctly based on the fire type.

Fire Prevention vs. Costly Disasters

The financial and human costs of fire disasters are staggering. Investing in fire extinguisher training and proactive fire safety measures can prevent:

- **Loss of Life:** Fires claim thousands of lives annually. Proper training significantly increases survival rates by enabling individuals to react swiftly.
- **Property Damage:** Fires in industrial and commercial settings can result in millions of dollars in damage. Quick response with fire extinguishers minimizes destruction.
- **Loss of Livelihoods:** Business closures due to fire-related damages impact employees and communities. Preventative training reduces these risks.
- **Community Disruptions:** Fires in public spaces can have long-term consequences, such as structural collapses.

Innovative Fire Prevention Training

Take advantage of advanced fire training solutions that combine realism, safety, and effectiveness to prepare individuals for real-world fire emergencies. Key training tools include:

- Live-fire training simulators offer a safe, controlled environment to practice using a fire extinguisher with real flames, helping trainees understand the heat and dynamics of fire suppression.
- Digital fire extinguisher training systems use laser-based extinguishers to simulate firefighting scenarios without real flames, making it ideal for training in locations where fires are likely to occur, such as offices, schools, and commercial buildings.
- Interactive training tools that reinforce fire response protocols through hands-on exercises.
- Extended reality (XR) training systems that integrate virtual reality with hands-on practice, allowing large groups of trainees to immerse themselves in virtual fire scenarios. These systems enable training on and offline, covering in-depth fire suppression techniques across modern and remote workplaces, ensuring comprehensive fire safety education.

Investing in fire extinguisher training is not just a regulatory requirement—it is a fundamental responsibility that safeguards people, property, and communities. As fire safety technology evolves, organizations must adopt modern training solutions to enhance preparedness and resilience against fire hazards. **OHS**

Matt Gardner, *Director of Marketing for LION Group, Inc., is at the forefront of merging technology and safety training.*

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Onsite Clinics: A Safer Future for Construction

Enhancing construction safety with immediate care, prevention and compliance.

BY TROY BUTLER

Construction sites are dynamic, high-risk environments where safety is paramount. From mitigating injuries to ensuring OSHA compliance, onsite medical clinics are becoming an indispensable tool for construction safety leaders. As the construction industry continues to face growing challenges — labor shortages, increased project complexity and tighter regulatory oversight — having an onsite clinic can make a measurable difference in worker safety, operational efficiency and overall cost control.

Unlike offsite medical care, onsite clinics provide immediate response to injuries, reducing the time it takes for workers to receive care and ensuring injuries are assessed accurately. In the construction environment, even minor delays in medical care can escalate into major health and safety issues. Rapid onsite care not only minimizes recovery time but also decreases workers' compensation claims and associated costs, and can return employees to work sooner, maintaining project timelines. Preventing minor injuries from becoming recordable incidents also helps construction firms maintain strong safety ratings and avoid regulatory penalties.

Immediate response is only part of the value of onsite clinics. These clinics are also highly proactive. With trained medical staff onsite, clinics can offer preventive care, regular health screenings and training focused on injury avoidance. Preventative care programs, such as ergonomic assessments and heat stress education, help construction teams stay ahead of potential risks and avoid common job site injuries. This forward-thinking approach creates a safer and more productive work environment where workers feel supported and valued.

Proactive health monitoring is a key component of injury prevention. Onsite clinics can identify early warning signs of fatigue, dehydration or musculoskeletal strain, letting providers intervene before these issues lead to accidents. Regular health surveillance also helps identify trends in workplace injuries, providing valuable insights for improving job site safety protocols.

For example, one of our supported construction sites saw a significant reduction in recordable injuries after implementing an onsite clinic. Workers received immediate attention for minor injuries, keeping them from escalating into larger claims. Training sessions on proper lifting techniques and safety equipment usage helped reduce the incidence of musculoskeletal injuries and repetitive stress issues. This prevention and early intervention kept the project on track and avoided costly delays.

OSHA and other safety regulation compliance is another critical factor in construction safety. Onsite clinics play a vital role in managing compliance by offering drug screenings, health evaluations and documentation required for regulatory purposes. This ensures that all necessary records are properly maintained and that workers are fit for duty, reducing the risk of fines and legal issues. Also, this health monitoring and injury tracking, helps safety managers spot trends and adjust safety protocols.

Onsite clinics also help construction companies reduce OSHA recordables by distinguishing between injuries that require advanced medical attention and those that can be treated onsite. This distinction prevents over-reporting of minor injuries and helps maintain strong safety records — an important factor when bidding on future projects and in improving a construction firm's reputation and competitiveness.

Mental health is a growing concern in the construction industry. With long hours, high stress and physically demanding work, construction workers are at higher risk for mental health issues, including depression, anxiety and substance abuse. Onsite clinics address these challenges, offering mental health support, stress management resources and access to professionals when needed. This helps foster a more resilient workforce and reduces the likelihood of burnout and absenteeism.

Onsite clinics also play a key role in helping injured workers return to work. Case management guides injured workers through recovery and return-to-work programs, reducing downtime and improving long-term health outcomes. Construction firms benefit from faster return-to-work rates, reduced compensation costs and increased employee morale. Injured workers who feel supported throughout their recovery are more likely to remain loyal to their employer and return to work with confidence.

Our onsite clinics are specifically tailored to the unique challenges of construction sites. With expertise in safety protocols and a focus on efficiency, these clinics empower leaders to address health and safety concerns with confidence. Our providers are trained to handle construction-specific injuries, and work closely with safety managers and job site supervisors to identify risks and implement targeted prevention strategies.

Construction firms that invest in onsite clinics are seeing measurable results. Lower injury rates, faster recovery times and improved compliance translate into reduced healthcare costs and stronger project performance. Workers who feel cared for and supported are also more likely to remain engaged and committed to their roles, improving retention and reducing turnover — a critical factor in the current labor market. A culture of safety, supported by accessible onsite healthcare, strengthens employee trust and enhances overall job satisfaction.

The result? A safer workplace, healthier employees and stronger bottom-line performance. Onsite clinics provide construction companies with a strategic advantage, allowing them to protect their workforce while enhancing operational efficiency. By prioritizing health and safety, construction firms can reduce costs, improve productivity and build a more sustainable future for their business. **OHS**

LEARN MORE:

Discover how Medcor's onsite medical clinics enhance construction site safety, reduce costs and improve employee health. Visit Medcor Construction for more information:

https://medcor.com/who-we-help/construction/

***Troy Butler** is the Executive Director of Construction Health and Safety at Medcor, with over a decade of experience in workplace health solutions and occupational safety.*

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Heat Stress, Fatigue & Human Performance

How wearables are transforming workplace safety.

BY ZACK BRAUN

In high-risk industries such as construction, worker fatigue and heat stress pose significant threats to safety and productivity. Traditional safety measures rely on workers recognizing symptoms too late. Wearable sensors provide real-time data for proactive intervention, reducing incidents and improving safety.

Linking Fatigue and Accidents

Studies show that 13 percent of workplace injuries can be attributed to fatigue (National Safety Council, 2024). Additionally, workers who regularly sleep less than five hours per night experience an injury rate of 7.89 per 100 employees, while those working more than 60 hours per week have an injury rate of 4.34 per 100 employees. Long shifts, physically demanding tasks, and extreme temperatures exacerbate fatigue, impairing judgment and increasing injury risks.

Break schedules and hydration policies alone can't detect dangerous exertion levels. Technology helps bridge this gap. Wearables continuously monitor safety metrics, providing real-time insights for prevention.

The Role of Wearable Technology

Heat stress remains a major concern in construction, where workers face extreme temperatures, heavy protective gear and long hours. Wearable physiological monitors offer key benefits:

- **Early Detection:** Identifies heat stress before symptoms appear.
- **Real-Time Alerts:** Notifies supervisors when workers show distress.
- **Environmental Integration:** Correlates worker data with temperature, humidity, and exertion levels.

While traditional methods help, heat stress symptoms often go unnoticed until it's too late. Wearables offer a proactive, data-driven approach to prevention. Research shows that wearable sensors provide critical real-time physiological and environmental data, allowing for early detection of heat stress symptoms and more effective intervention strategies (Torbat Esfahani et al., 2024).

Case Study: Wearables in Action

At a Department of Energy (DOE) cleanup project, construction workers faced extreme temperatures exceeding 115°F. Despite existing safety protocols, heat stress remained a concern. To mitigate risks, supervisors implemented real-time physiological monitoring through wearables, enabling dynamic work-rest adjustments.

The result? Zero heat-related incidents among workers using these devices. This data-driven approach enabled early intervention, proving more effective than manual self-assessment.

Cost, Privacy & Worker Adoption

Is the Investment Justified? A common concern is that wearables add unnecessary costs when traditional policies already exist. However, OSHA's Safety Pays Individual Injury Estimator reports that a single heat-related workplace injury can cost employers approximately $79,081 (OSHA, 2024). This includes direct costs such as workers' compensation, medical treatment and hospitalization, as well as indirect costs like lost workdays and decreased productivity. Investing in wearables enables early heat stress detection, preventing costly incidents while improving overall efficiency.

Worker Privacy Concerns. Some workers worry about constant monitoring, but proper implementation ensures anonymization and prioritizes safety alerts over surveillance. Many initially resisted wearables but later recognized their safety benefits. Research shows that WIoT effectiveness in construction depends on addressing security risks and maintaining worker trust (Okonkwo et al., 2022). Companies that enforce clear data policies and robust security measures can increase adoption while ensuring compliance with privacy regulations.

Adoption Challenges. The construction industry has been slow to embrace new technologies, and some question whether wearables are a passing trend. However, some large-scale projects have successfully integrated them, demonstrating long-term benefits in reduced incidents and increased efficiency. As regulations evolve, wearable adoption is expected to expand.

AI & Predictive Safety Insights

Looking ahead, AI-powered predictive analytics will take wearables beyond simple monitoring. By analyzing historical data and real-time inputs, AI can:

- Identify fatigue patterns before accidents occur.
- Provide personalized work-rest recommendations based on individual exertion levels.
- Optimize scheduling to reduce overexertion risks while ensuring compliance with safety guidelines.

Additionally, exoskeleton technology — designed to reduce strain on workers — could be integrated with wearables to ensure they do not push beyond safe physical limits. This combination of AI, wearables and assistive devices has the potential to revolutionize construction safety (Torbat Esfahani et al., 2024).

Conclusion

Heat stress and fatigue remain significant yet often overlooked risks in construction. While traditional safety measures provide some protection, wearables offer real-time data for proactive intervention, reducing incidents.

Research shows wearables improve safety, reduce downtime and provide strong ROI. As AI-driven insights advance, wearable solutions will shift from an emerging trend to an industry necessity.

Adopting connected safety technologies now ensures worker protection, efficiency and regulatory compliance. **OHS**

LEARN MORE:

Discover how connected safety technology and wearables can help protect your workforce. Learn about physiological monitoring, real-time alerts and innovations for safer job sites. For more insights, visit **www.slatesafety.com/blog.**

Zack Braun, *CEO of SlateSafety, co-founded the company in 2016 while at Georgia Tech, driven by a passion for creating wearable technology that enhances real-time worker safety.*

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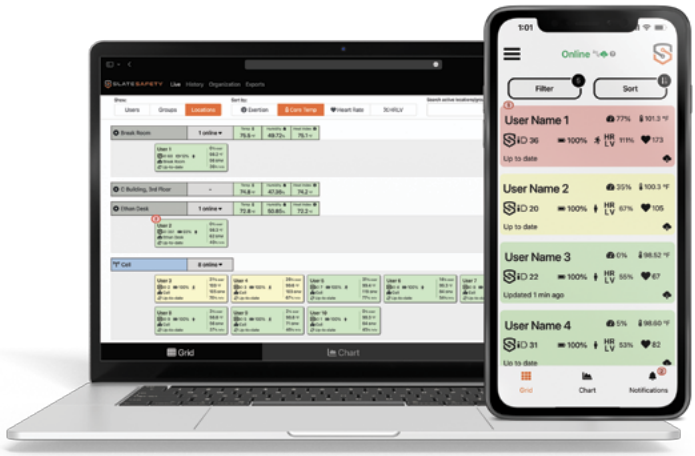

Construction sites are fast-moving, high-risk environments—keeping workers safe requires real-time data and proactive intervention. SlateSafety's connected safety solutions give you instant visibility into worker well-being, helping prevent heat stress, overexertion & other jobsite hazards. Stay ahead of risks with continuously evolving software and rugged wearable technology.

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Recent OSHA Amendment to Clarify PPE Fit Requirement

Learn more about the revisions to 1926.95 and what to keep in mind when choosing fall protection PPE.

BY MSA SAFETY TEAM

Since July 2023, OSHA has been working on a rule change to clarify personal protective equipment (PPE) requirements for construction. Since then, the proposal has gone through the necessary procedures, and OSHA has finalized the revision to the PPE standard for construction work. Released in December 2024 and effective January 13, 2025, the revised standard clarifies the language around PPE fit.

MSA The Safety Company

What Did OSHA Change?

OSHA amended 29 CFR § 1926.95, which is the OSHA standard regarding PPE in construction settings. Specifically, § 1926.95(c) now states that "Employers must ensure that all personal protective equipment: (1) Is of safe design and construction for the work to be performed; and (2) Is selected to ensure that it properly fits each affected employee."[1] Prior to the change, § 1926.95(c) did not include the language about proper fit. OSHA has explained that the rule change aligns the construction PPE standard with the PPE standards for general industry and shipyard applications.[2]

Why Did OSHA Make the Change?

In its December 2024 comments on the rule change, OSHA explained that "the proposed language appropriately clarifies employers' obligations under the standard."[2] It is the view of OSHA that this ruling is not a "substantive" change because it "has historically interpreted § 1926.95 as requiring that PPE properly fit each employee, has published guidance to that effect, and has issued citations to employers in the construction industry who failed to provide properly fitting PPE."[2] However, the standard prior to the change did not explicitly state that PPE must properly fit.

OSHA also cites the safety implications of improperly fitting PPE as a reason for being more explicit about requiring a proper fit. The agency explains that "Improperly fitting PPE may fail to provide any protection to an employee, reduce the effectiveness of protection, present additional hazards, or discourage employees from using such equipment in the workplace."[2]

In its comments on the new rule, OSHA provided examples, including loose-fitting goggles not protecting a worker from flying debris or the potential for loose-fitting clothing, like gloves, becoming caught in machinery.[2] OSHA also noted that commenters on the proposed rule frequently mentioned ill-fitting fall protection harnesses, with several reports of workers being provided with harnesses that were too large.[2] OSHA determined that revising the standard for PPE in construction "to include clear and explicit language that PPE must fit properly would help ensure workers in the construction industry are protected from workplace hazards."[2]

This revision applies to applications subject to OSHA regulations under the construction industry standard. The requirement that PPE fits properly now expressly applies to PPE used in general industry, maritime, and construction applications.

How to Adhere to OSHA's Change

OSHA did not adopt a formal definition of the meaning of "properly fits" in the amended regulations.[2] However, in the notice of proposed rulemaking, OSHA explained that "proper fit" in the construction industry means that the PPE:

- "is the appropriate size to provide an employee with the necessary protection from hazards"; and
- "does not create additional safety and health hazards arising from being either too small or too large."[2]

Some PPE products offer various sizes. It is important to choose appropriately sized protective gear to ensure the best possible protection. One particular area where sizing comes into play is fall protection harnesses.

Selecting Fall Protection Harnesses

Certain factors can help improve comfort and adjustability, such as features allowing the worker to loosen or tighten the harness, depending on the fit, and contoured padding across the shoulders and back, which can help to prevent or reduce pressure points and chafing. OSHA's ruling mentions comfort as an important aspect of PPE selection, stating, "improperly fitting PPE can be uncomfortable for the wearer, which in turn can lead workers to modify or disregard the PPE and become vulnerable to a hazard."[2]

Weight capacity is also an important consideration; ANSI Z359.11 states that a full-body harness should be able to support users within the capacity range of 130 – 310 lbs.[3] A harness may be rated to a larger capacity (e.g., 400 lbs.) for OSHA and CSA standards, but to meet the ANSI standard, capacity must conform to the ANSI limits shown in large type on the label's first page. **OHS**

LEARN MORE:

Footnote references for this article:

1. **https://tinyurl.com/yf74u6mr**
2. **https://tinyurl.com/y8tee2zt**
3. **https://tinyurl.com/4fyw8f2e**


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Construction Site Safety Essentials

Gear up your worksite's emergency safety equipment to confirm compliance, maximize effectiveness and ensure the greatest protection for employees.

BY RYAN PFUND

Construction sites are notoriously high-risk environments where workers are exposed to hazards such as chemical splashes, dust, debris, and thermal injuries. Emergency safety showers and eyewashes are critical safety measures that provide immediate first-aid treatment by flushing the affected areas with water, helping to prevent serious injuries from exposure to harmful substances. Further, for construction companies, ensuring these systems are properly installed and maintained is essential for worker protection and regulatory compliance.

Why Emergency Showers and Eyewashes Matter

Construction sites often involve the use of hazardous materials such as concrete additives, solvents and corrosive cleaning agents. Accidental eye and skin exposure to these substances can cause severe injuries if not treated immediately. The first 10 to 15 seconds after exposure are crucial in preventing long-term damage, which makes quick access to emergency equipment vital.

Common Risks on Construction Sites

- **Concrete burns** from prolonged skin contact with wet concrete.
- **Chemical burns:** Acids, alkalis, and solvents can cause severe skin and eye damage.
- **Eye injuries** caused by flying debris dust, or chemical splashes.
- **Exposure to solvents and corrosives** that can cause tissue damage.

Compliance with Safety Standards

In the United States, the Occupational Safety and Health Administration (OSHA) and the ANSI/ISEA Z358.1-2014 standard set the requirements for emergency eyewash and shower stations. For construction sites, this means ensuring:

- **Proximity:** Equipment must be located within 10 seconds (about 55 feet) of hazardous areas.
- **Flow and Duration:** Emergency showers must provide at least 20 gallons per minute (GPM) for 15 minutes, and eyewashes must deliver 0.4 GPM.
- **Tepid Water:** The water temperature should be between 60°F and 100°F to prevent shock and allow continuous flushing.

Best Practices for the Construction Industry

1. Strategic Placement. On construction sites, showers and eyewashes should be positioned near areas where hazardous materials are handled, such as mixing stations or chemical storage areas. Ensure clear signage is visible from a distance.

2. Weekly Testing and Maintenance. Equipment must be inspected and tested weekly to ensure proper operation. This prevents issues like clogged nozzles or stagnant water, which could compromise worker safety.

3. Water Supply Considerations. Construction sites may face unique challenges with water supply. Mobile or self-contained units can be used where permanent plumbing is unavailable. Ensure units are properly maintained and filled with fresh water.

4. Worker Training and Emergency Drills. Educate workers on how to locate and use emergency equipment. Regular drills can help reinforce the importance of immediate response and ensure workers feel confident in an emergency.

Proper Usage Guidelines

When an incident occurs, workers must act quickly:

- **Eyewash Station:** Flush eyes immediately for at least 15 minutes. Keep eyelids open and roll eyes to ensure full coverage.
- **Emergency Shower:** Remove all contaminated clothing and rinse affected areas for a minimum of 15 minutes. Make sure the water reaches all parts of the body.

After using the equipment, always seek medical attention, even if symptoms seem minor.

Fluid Dynamics Technology Improves Washdown

The newest generation of emergency fixtures is designed to deliver a more uniform and complete spray pattern distribution, using fluid dynamics technology. Specifically:

- **New drench shower designs** work in tandem with a pressure-regulated flow control and the spinning motion of water, which creates an optimal spray pattern to rinse off contaminants as quickly and thoroughly as possible. The contoured shape combined with the spinning water funnels the water into a concentrated yet gentle deluge to ensure the most effective flush available.
- **New eye/face wash designs** using this new technology can ensure water is dispersed to all areas of the face, including the forehead, temples and chin. These new types of eye/face washes provide 20 percent better washdown protection than other designs.

For the construction industry, where unpredictable conditions and hazardous materials are common, emergency safety showers and eyewashes are essential. By following regulatory standards and adopting best practices, companies can minimize risks, ensure regulatory compliance and, most importantly, protect their workers' safety and health. **OHS**

Ryan Pfund is Senior Product Manager with Bradley Company. Based in Menomonee Falls, Wis., Bradley is a USGBC & ISEA member and manufacturer of plumbing fixtures, washroom accessories, partitions, locker room products, and emergency fixtures.

Emergency Safety Solutions

PERFORMANCE, MEET SAFETY

Bradley provides an unparalleled variety of industrial solutions and depth of expertise. Our comprehensive line of emergency safety products for eye/face wash and drench shower applications ensure the 15 minute flush required by ANSI/ISEA Z358.1. With reliable, effective safety products that are available when and where you need them, Bradley is the name to trust.

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The Miller TurboLite+ Edge Cable ANSI Class 2/CSA Class SRL-LE is designed for leading-edge applications. It offers versatility, enhanced user mobility and maximum safety. It features a high-strength cable and impact-resistant housing that makes it ideal for demanding environments. 6-foot length is available in US & Canada in both single and twin units. 9-foot units in single/twin configuration are currently available in U.S. only. Stay secure. Work with confidence. *https://tinyurl.com/4zma89d7*

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The QuickFire™ XR system by LION is a next-generation virtual reality training tool that transforms fire extinguisher training into a safe, engaging, and effective experience. By simulating real fire scenarios, QuickFire XR helps users develop critical response skills without the mess and hazards of traditional training methods. *www.lionprotects.com/quickfire*

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Medcor's onsite medical clinics provide tailored solutions for construction sites, ensuring quick injury response, OSHA compliance and proactive health management. By reducing costs and improving worker safety, our clinics empower safety leaders to create healthier, more productive teams. *https://medcor.com/who-we-help/construction/*

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Get real-time safety alerts with SlateSafety's BAND V2 wearable personal monitor and BEACON V2 environmental monitor. The BAND V2 can be paired with the BEACON V2, which measures environmental factors, including eWBGT to help prevent heat stress and incidents before they occur. Utilize our online platform for actionable insights and historical data. Get a FREE 30-day trial! https://*slatesafety.com*

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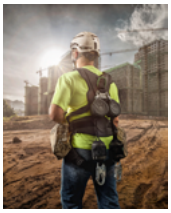

Are you getting enough from your work-at-height equipment? MSA is offering the chance to try our new working at height solutions free of charge. With our Dare to Compare program, you can request a trial of the most popular fall protection products at your facility, at your convenience. *https://tinyurl.com/4yen8pma*

BRADLEY'S HEAT TRACE SHOWERS

Bradley's Heat Trace Showers with Halo™ Technology, provides safe and fast eye wash and emergency shower relief in the most extreme, frigid environments. Engineered to provide dependable freeze protection down to -50° F/-46° C, Bradley's selection of freeze-protected fixtures arm employees who need emergency shower relief in the toughest indoor or outdoor industrial applications. *https://tinyurl.com/yprwpa5h*

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