

## Winterize Your Worksites for Optimal Safety and Productivity

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As winter continues, contractors and construction professionals face a range of challenges that can compromise safety, productivity, and project timelines. Cold weather conditions, from colder air to snow and ice, can quickly turn sound work environments into perilous spaces without thorough hazard assessments and careful planning.

Below are some of the best practices for winterizing your project sites, which will help your operations optimize safety and productivity during the colder months.

### ASSESS WINTER HAZARDS

Before the first frost hits, safety managers should conduct a thorough job-hazard analysis focused on the impacts of colder weather conditions. This involves identifying potential hazards unique to winter, such as:

- » Slippery surfaces caused by snow and ice
- » Outdoor exposure that could cause cold stress injuries like frostbite and hypothermia
- » Electrical hazards associated with wet and frozen conditions
- » Limited visibility due to shorter daylight hours and inclement weather

When conducting a Job Hazard Analysis (JHA), break down each job into its individual steps. This allows you to identify potential hazards associated with each step and implement control measures to eliminate or mitigate those hazards. For



example, you could create stone or concrete paths to prevent erosion and stabilize access areas, or ensure equipment and tools are warmed before use to avoid damage from freezing temperatures.

### EQUIP WORKERS WITH PROPER WINTER PPE

Workers in cold environments require personal protective equipment that provides warmth and safety. Employers should provide their workforce with insulated PPE designed for winter conditions in accordance with their environment, such as:

- » Insulated gloves that maintain the dexterity required for specific tasks while protecting against frostbite
- » Thermal jackets and pants that offer wind and water resistance

- » High-visibility gear to ensure workers remain visible in poorly lit environments and adverse weather conditions
- » Slip-resistant boots that provide traction on icy or wet surfaces

Layering is key to adapting to winter's unpredictable weather. Use a combination of moisture-wicking base layers, insulating mid-layers, and wind and waterproof outer layers to enable workers to adjust their gear to changing temperatures and activity levels seamlessly.

Wearing certain fabrics, such as synthetic fibers with moisture-wicking properties, for the base layer helps keep the wearer comfortable by managing sweat and keeping the skin as dry as possible. Fleece and down in the mid layer provide warmth. Ideally, outer layers should combine waterproofing with some ventilation to prevent overheating. This layering approach maximizes warmth while enhancing flexibility and comfort to ensure workers stay safe and productive throughout the day, no matter how the weather shifts.

### **ADDRESS ELECTRICAL SAFETY**

Freezing temperatures, heavy rain, snowfall, and strong winds can exacerbate electrical hazards. Without adequate insulation, moisture from cold air can come into contact with electrical systems, causing them to short circuit. In addition to compromising worker safety, these and similar electrical incidents can lead to costly project delays and equipment damage.

To mitigate these risks, safety managers should ensure that all electrical installations are properly grounded and insulated. They should also provide workers with the necessary training to handle electrical equipment in wet conditions. Here are some additional tips:

- » Use ground fault circuit interrupters in all outdoor areas. These devices automatically cut off the electrical supply when a fault is detected, preventing damage to electrical systems while protecting workers from electrocution.
- » Keep electrical panels shielded from the elements and inspect cords and plugs for damage before use. Use foam gaskets to insulate electrical outlets, seal gaps, and prevent drafts.

- » Install weatherproof enclosures around outdoor electrical components to prevent snow, ice, and rain from entering them and causing short circuits or corrosion.
- » Always have licensed electricians familiar with winterization techniques perform the necessary electrical work. These professionals have the experience and expertise to handle complex electrical systems and identify potential issues that might not be obvious to the less-trained eye. They can also ensure that all work complies with local codes and regulations.

### **OPTIMIZE EQUIPMENT AND MATERIALS FOR COLD WEATHER**

Cold weather can significantly impact the performance and lifespan of construction equipment and materials. Lower temperatures can slow down the curing process of concrete and cement, compromising structural integrity. Additionally, water that seeps into concrete can freeze and expand, causing cracks and weakening the material. Meanwhile, standard lubricants in machinery may thicken in colder temperatures, causing inefficient operation and potential mechanical failure.

Here are some tips for mitigating these instances/threats:

#### **Concrete and Cement:**

- » Add cold-weather concrete additives to accelerate curing and prevent freezing.
- » Cover concrete pours with insulation blankets to protect them from freezing temperatures.
- » Set up temporary heated enclosures to maintain optimal curing temperatures.

#### **Equipment and Machinery:**

- » Use winter-grade engine oils, antifreeze, and hydraulic fluids to prevent freezing and ensure proper lubrication.
- » Install battery warmers to maintain battery efficiency.
- » Install winter tires with appropriate tread patterns for better traction on snow and ice.

Choose materials specifically designed for cold weather conditions, such as cold-weather adhesives and sealants. Whenever possible, store materials indoors to protect them from freezing temperatures, moisture, and other elements that can degrade their quality.

## IMPLEMENT SITE-SPECIFIC SNOW AND ICE MANAGEMENT PLANS

Slips, trips, and falls are among the most common accidents in the construction industry. According to the Bureau of Labor and Statistics, the construction industry accounted for 47.4% of all fatal falls, slips, and trips in 2022. Because every worksite is unique, and winter conditions can change throughout the day and overnight, project managers should implement snow and ice management strategies to keep work areas clear and safe.

These include the following:

- » Set time to inspect and react to conditions before shifts start and as conditions change or issues reappear, putting up clear signs to alert workers of potential hazards or problem areas.
- » Plow and salt access roads, entryways, and workways regularly, and use temporary heating units to melt snow and ice in high-traffic areas.
- » Assign dedicated personnel or hire third-party vendors to manage snow removal and ice mitigation daily, especially after heavy snowfalls or freezing rain. These steps can drastically reduce the incidence of slips, trips, and falls over the winter season.


## MANAGE PRODUCTIVITY AND SCHEDULING

Winter conditions also affect productivity. Construction managers should plan for potential delays caused by inclement weather, such as snowstorms or freezing rain, adjusting schedules to account for shorter work days and unpredictable weather patterns so projects can stay on track without compromising worker safety.

Here are a few ways to manage productivity in cold weather:

- » Schedule outdoor tasks during the warmest part of the day.
- » Rotate crews to give workers time to warm up in heated shelters.
- » Use portable heaters to warm up work areas and equipment.
- » Allow for flexibility in deadlines to account for winter weather delays.

When possible, shift specific tasks, such as prefabrication work and preinstallations, to controlled indoor environments to keep the project moving forward during extreme weather.

No matter how well you prepare, winter-related hiccups and emergencies can still happen on jobsites. As such, having a comprehensive emergency-response plan with standard procedures for cold-related illnesses, accidents, equipment failure, and power outages is critical to maintaining safety and productivity throughout the colder months. 



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### About the Author

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Rick Pedley joined the family business in 1979. [PK Safety](#), a supplier of occupational safety and personal protective equipment and manufacturer of its own new FR line GRIT, has been operating since 1947 and takes OSHA, ANSI, PPE, and CSA work safety equipment seriously.

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### About the Article

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