



GUIDE TO SAFETY FOR THE CONSTRUCTION INDUSTRY

Protecting People, Equipment, and Operations
with Smarter Safety Solutions

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SAFETY IS NOT THE ABSENCE OF EVENTS. SAFETY IS THE PRESENCE OF DEFENSES.

- *Todd Conklin*

Modern construction sites are different than those in the past. The environment is complex, the work is fast-paced, and budget constraints and project deadlines make efficiency paramount. With emerging challenges like sustainability targets and an aging workforce, maintaining safety on the jobsite is no easy task.

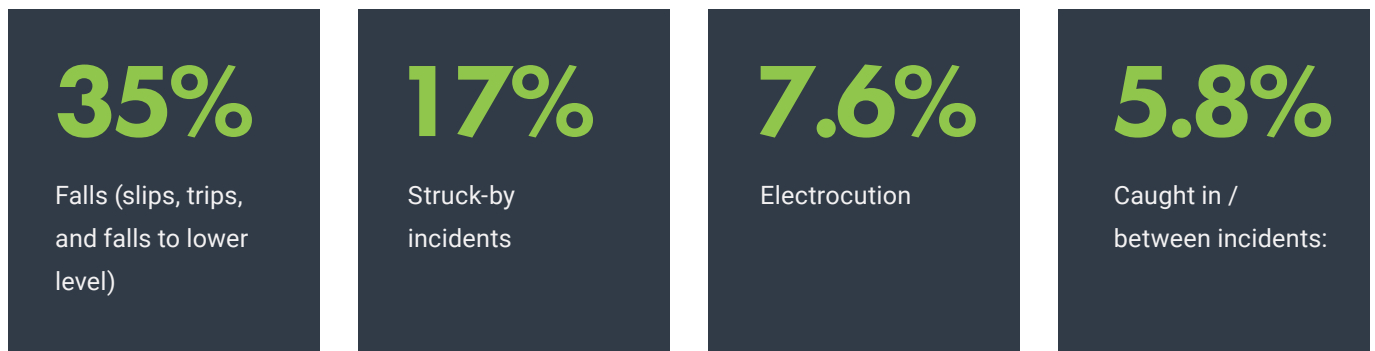
This guide is designed to help you meet the issues construction companies run into when trying to ensure the safety of all workers. It provides an overview of key safety concerns and highlights practical solutions for mitigating risks and supporting a safe and compliant worksite.

What We're Up Against: The Current State of Safety in the Construction Industry

Despite impressive advancements in safety across the industry, construction remains one of the most hazardous occupations globally. Even as safety professionals, equipment manufacturers, and regulators work tirelessly to make the jobsite safer than it was yesterday, construction still has a higher rate of injury and fatality compared to many other industries.

Fatal Hazards on the Jobsite

65.5% of all construction fatalities in 2023 resulted
from one of the following four causes:



(Source: Bureau of Labor Statistics)

Since the 1970s, both the United States and Canada have seen a relatively steady decline in workplace fatality rates. This is partly due to increased safety regulations and successful campaigns raising awareness about occupational risks and safe work practices. And it continues to pay off - in recent years, there has also been a clear downward trend in non-fatal injury rates across North America.

Unfortunately, the picture isn't quite so rosy when it comes to construction. Rather than going down in a predictable fashion, fatalities in the construction sector have seen fluctuations over the years, and remain significant.

Clearly, regulations and awareness are not enough. To keep workers safe on the job, construction companies need to invest in the right equipment, implement the right measures, and take a comprehensive and proactive approach to safety.

Major Challenges to Construction Safety

An Aging Workforce

Between 2003 and 2020, the percentage of construction workers aged 55 and over almost doubled. The average construction worker is older than they were just two a couple of decades ago, and that demographic shift comes with some additional safety challenges.

While studies show that older construction workers have a comparable rate of injury compared to their younger counterparts, the severity of their injuries and the costs associated with them tend to be higher. While all workers are at risk of, say, tripping over a cable, older workers are more likely to sustain a serious injury from the incident. This makes implementing protective measures all the more important.

An aging workforce also introduces risk factors that must be taken into consideration. Older workers are more likely to suffer from chronic conditions and to take medication to manage them. Vision and hearing impairment are also more common as workers get older. Fatigue sets in more quickly as well, which can result in ergonomic injuries, errors and slip-ups, or struggles keeping up with fast-paced work.



Transient Workforce

Construction fluctuates substantially throughout the year, especially in areas with colder winters. Rather than keeping a steady staff, construction companies often deal with this by hiring crews as needed to complete projects.

While these temporary workers are capable of getting the job done, they don't stay with the company long enough to assimilate its culture and often miss out on training opportunities. They may also bring norms and practices they learned on other jobsites, which may not be up to their current employer's standards.

As a result, many construction teams are made of up workers who use different work practices, follow different workflows, and were trained on different equipment. These inconsistencies can create hazardous situations and strain the capacities of even the most vigilant site supervisors.

Evolving Compliance Requirements

Safety standards aren't set in stone. Regulations are updated in light of new research, safety data, and industry best practices. For construction companies, staying on top of these requirements while ensuring that operations can continue smoothly can be complicated.

Safety professionals need to ensure that training is up to date, the equipment on site is compliant, and that overall site conditions conform to the latest standards. Using quality safety solutions helps organizations stay ahead of regulatory changes. Products with smart designs, durable materials, and additional protective features are more likely to remain suitable even when compliance requirements become stricter.

This is an even greater concern in recent years, as environmental standards and sustainability targets are becoming more and more demanding. Construction companies now have to take additional measures to protect not only their employees, but the environment on and around the worksite. This might involve the use of ground mats to protect sensitive terrain near the site, taking steps to reduce a project's overall emissions, or opting for sturdy safety products to limit waste. Working with a reputable manufacturer can help you ensure that your site is fully compliant and even exceeds baseline requirements.

The Business Case for Safety

Safety is essential, but it's not simply a set of demands and legal requirements that must be met. There are also real financial benefits to ensuring a safe worksite.

Lower Risk Equals Higher Productivity

When an incident happens on site, things grind to a halt. Injured workers need medical attention and may have to leave the site or take time off, but they're not the only ones affected. Supervisors and members of the safety team also need to conduct an investigation. Workers who witnessed the event may need to stop working temporarily to provide their testimonials.

Workers who have to step in and cover their injured colleague's position may also be less experienced in the specific aspect of the job or be unfamiliar with the working procedure. This can slow them down while also increasing risks.

Even small incidents and seemingly minor events can result in costly delays or missed project deadlines.

Investing in Safety Has Great Returns

Based on figures from OSHA, every dollar invested in safety results in a four to six dollar return in cost savings and increased productivity.

Those are impressive numbers and makes it clear that investing in safety is the obvious choice. But where do those returns come from? They may not show up directly on the balance, but they materialize in a number of ways, including:

- 1. Improved employee morale**, which boosts participation, strengthens engagement, and drives productivity.
- 2. Reduced insurance costs**, since organizations with lower injury rates can get more affordable premiums.
- 3. Reputational advantage**, which can help the company secure contracts and hire contracting firms with strong standards.
- 4. Better compliance**, resulting in fewer investigations, fines, and lawsuits.

Cutting Costs vs. Cutting Corners

Construction is a very cost-sensitive industry. Budgets are tight and so are timelines. There can be a pressure to cut costs, but this should never result in cutting corners.

Cuts to PPE, safety equipment, and training are tempting ways to reduce immediate expenditures, but these savings are a false economy. Unlike safety gear, incidents, injuries, and fatalities don't come with price tags attached to them, but their costs can be significant. Expenses associated with hiring and training replacement workers, repairing damaged equipment, and fines and penalties can all be avoided with up-front investments in safety.

Implementing safety measures keeps costs low and productivity high – cutting corners doesn't.

Safety Products That Help Enhance Construction Site Safety

It's impossible to eliminate every hazard on the construction site. But with the right safety solutions, you can mitigate risks, protect your workforce, and get the job done with fewer issues and delays.

Here are some of the products Checkers Safety™ has designed to keep workers and equipment safe, even in the toughest conditions.

Cable Protectors

With so much powered equipment being used on site, having cables and extension cords laid across walking surfaces and access roads is crucial in order to help prevent tripping hazards that could contribute to the already high number of slips, trips, and falls that take place in construction. On top of that, heavy traffic and equipment being driven over the cables can cause them to get damaged over time, which could result in expensive downtime.

Cable and hose protectors provide a physical separation between cables or hoses and the materials or forces that could damage them. They prevent cables and hoses from being crushed, pulled, or worn down by pedestrian traffic or heavy equipment. They also help with cable and hose management, neatly organizing each line in specific conduits to prevent tripping hazards.

Selecting the Right Cable or Hose Protectors

Cable and hose protectors come in various sizes, colors, and materials. Some are designed for indoor applications while others are suitable for outdoor use. Many of the outdoor models are modular, allowing workers or site supervisors to interlock as many sections as needed to protect cables in a given work area.

When choosing the right cable protector for your site, consider:

- 1. Durability:** Conditions on the construction site tend to be harsh, so make sure your cable protectors can withstand the pressure. Depending on the application, they may need to be able to withstand chemicals, prolonged UV exposure, and the weight of heavy equipment. Materials can make a large impact: consider simple solutions like using a urethane product vs. rubber solution.
- 2. Outer diameter of cable:** Cable protectors must be able to accommodate the diameter of your cables or hoses. For slim power cords, a 1" line protector might be sufficient. If you're dealing with hoses or higher-gauge cables, you may need protectors that allow 6.5" diameters.
- 3. Visibility:** Opt for cable protectors that feature components in hi-viz red, yellow, or orange. This will ensure that they stand out in the environment.

4. **Channels:** Cable protectors can house multiple cables at once. For smaller projects or crews, three channels might be sufficient. For busier sites, a five-channel protector could make managing cables more efficient.

5. **Ease of Installation:** If you require long sections of protection or if the protector will be frequently removed or reconfigured, then a modular or interlocking system will be beneficial. These designs will reduce complications during installation and minimize downtime.

6. **Compatibility:** Not all cable protectors are compatible with one another, which can cause problems when your team runs low and has to supplement its stock or hook up to the cable protectors used by the contractors on site. Choosing a product with a common connectors will address this challenge.

7. **Reduce Risk of Loss:** Cable protectors are frequently lost when people mistakenly take them, believing it belongs to them or their company. Using a solution that features distinct colors or a custom logo can make its ownership obvious and reduce the likelihood that it will go missing.

Standards and Regulations for Cable and Hose Protectors

There is no specific legislation in the US or Canada stating that cables running over a road must be protected in every situation. However, various regulations address the hazards posed by such cables and imply the need for protection or other preventative measures.

Here is a list of the most relevant ones:

1. **OSHA 1926 Subpart K (Electrical):** While this construction standard doesn't have a specific rule for cables over roads, it does emphasize the need to protect employees from electrical hazards. This includes ensuring that cords and cables are not worn or frayed and are used in a way that doesn't create a hazard. While not mentioned explicitly, cable protectors are one way to prevent cables and wires from becoming worn out.
 - › **Section 1926.416(e)(2)** states that extension cords shall not be fastened with staples, hung from nails, or suspended by wire, implying a need for proper management to prevent damage and hazards.

2. **OSHA 1910 Subpart S (Electrical):** This section applies to general industry and has similar provisions regarding the safe use and condition of electrical cords and cables (1910.304(b)(3)(ii)(C)). It requires regular inspection of cord sets and prohibits the use of damaged equipment.

3. **OSHA 1926.416(b)(2) (Passageways and open spaces):** This regulation states that working spaces, walkways, and similar locations shall be kept clear of cords so as not to create a hazard to employees. This could be interpreted to include temporary cables running across roadways within a construction or work zone. If the area can't be cleared through routing, then cable and hose management using cable protectors is the next best option.



UHB5060: 6.5" Diamondback® Single Tunnel System

Checkers Diamondback® single tunnel systems provide protection for valuable cable and hose lines while ensuring a safe method of passage for vehicles. High-density, all-weather urethane construction protects from damage by physical pressure and reduces cable and hose maintenance and replacement costs.



GD5x125: 5-Channel Guard Dog® Cable Protectors

Checkers Guard Dog® 5-Channel Cable Protector features a hinged lid, a modular, interlocking design, and the capacity to protect up to five cables and hoses with an outside diameter of up to 1.325". Its all-weather polyurethane construction gives it unmatched durability, and with the use of Dog Bone connectors, it can extend to any length. It also features a 5-bar tread surface, ensuring maximum traction for both vehicles and pedestrians.



YJ5-125-AMS-Y/B: Yellow Jacket® Heavy-Duty Cable Protector AMS® System

The Yellow Jacket® 5-channel AMS® (Advanced Modular System) is a patented technology that utilizes separate cable protector sections and ramps to create a system that is fully expandable to hold an unlimited number of cables. By detaching the ramps, you can also quickly add cable runs and ADA compatible side ramps to existing systems. The Yellow Jacket® AMS® readily handles heavy truck and bus traffic while providing easy access for pedestrians, carts, and wheelchairs. Hinged lids make for easy loading of cables and hoses.

Ground Protection

Ground conditions on most jobsites are less than ideal. The terrain can be easily damaged, unstable, or provide too little support for heavy equipment. Construction teams often deal with this by laying down plywood or lumber to create a flat and sturdy surface; however, this can be costly and may fail to provide sufficient stability or weight resistance. In these cases, ground protection matting can be a more suitable option.

Ground protection matting comes in various types and designs to accommodate different project needs:

- 1. Ground Protection Matting:** Designed to displace the weight of heavy vehicles, allowing them to traverse over mud, sand, and other adverse terrain. These mats can be used to protect the terrain in sensitive areas (such as wetlands and agricultural land) or to prevent equipment from sinking into the ground or collapsing. Features like textured designs for increased vehicle traction and interlocking capabilities for easier connection can lead to improvements in productivity and cost savings.
- 2. Outrigger Pads:** Stabilizing pads designed to bear and distribute the weight of heavy equipment to create a working platform that provides support for outriggers and other types of heavy equipment. Without these pads, the surface risks giving way and causing the equipment to collapse, creating a life and death situation for the equipment operator and anyone else within the collapse radius.
- 3. Ground Stabilizing Paving Systems:** Unlike ground protection mats, these systems are permanent installations. They consist of interlocking cells that are laid on the ground surface and filled with stones, seeded with grass, or equipped with high-visibility inserts. Once in place, they maintain the ground's integrity, protect it from vehicle damage and pedestrian traffic, and disperse water from excess rain or flooding.

Selecting the Right Ground Mats

Here are a few factors to consider when purchasing ground mats for your worksite:

- 1. Load Bearing Capacity:** The mat or pad must be capable of supporting the maximum weight of your equipment, including dynamic loads (e.g., cranes turning, trucks moving). Additional consideration should be given when booms are involved, as the pressure applied on the pad changes with the extension, angle, and orientation of the boom, as well as the weight of the load being lifted.
- 2. Ground Conditions:** The support capacity of the ground will depend on the soil type, moisture levels, and its topography. While hard-packed soil or rock typically needs less protection, keep in mind that concrete and asphalt can also collapse, so you may need ground mats or outriggers on these surfaces.
- 3. Equipment Type:** Light-duty equipment like skid steers and pickups will require different matting than heavy-duty cranes and excavators.
- 4. Flexibility and Durability:** Plywood or timber can be flexible and degrade over time, they are not very durable or weather-resistant. HDPE or UHMWPE matting provides greater durability while still remaining light and easy to handle. Composite mats with reinforced materials can also provide greater strength and flexibility where needed and help reduce your total cost of ownership.
- 5. Traction and Texture:** Mat surfaces can become very slippery, especially when wet or covered in snow or ice. An anti-slip surface helps prevent both people and machinery from slipping. Also, consider mats with tread patterns on both sides to avoid issues with mats moving out of place when they slide against the ground surface.

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- 6. Modularity:** Mats that are designed to be walked or driven on will generally require long, continuous surfaces. Interlocking mats allow you to create multiple configurations without any gaps in the surface. They will also reduce the risk of equipment dislodging an individual piece out of place.
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- 7. Lifespan:** Being able to reuse mats many times over will increase your return on investment and reduce project costs. To ensure a long lifespan, look for mats that feature abrasion resistance, flexibility in cold weather, and crush resistance.

Specific Considerations for Outrigger Pads

While they are a subset of matting, outrigger pads serve a unique purpose and must be approached differently. Here are some things to consider when choosing the right ones for your project:

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- 1. Crush Strength / PSI Rating:** Outrigger pads are subject to tremendous strain from the outrigger pressure and equipment weight. The PSI rating of the outrigger pad should always match or exceed the nominal pressure from the outrigger.
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- 2. Pad Size:** A larger surface area will provide better load distribution. The softer the ground, the larger the pad you will need.
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- 3. Material Memory:** Some pads deform or break more quickly than others. Selecting quality pads made with good materials will help prevent this issue.
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- 4. Edge Design:** Edges with sharp angles will break through the ground more quickly. Look for pads with rounded edges to prevent cracking and make them safer to handle.
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- 5. Ease of Transport:** Although smaller than ground mats, outrigger pads are still fairly large and heavy to be handled manually. Handles make them a lot more manageable, while storage racks will save you space and make for better housekeeping and workspace organization.

Standards and Regulations for Ground Mats

Ground protection mats and outrigger pads fall under general safety legislation and standards in both the United States and Canada. While there are no federal laws that cover them by name, their use is implied or required under broader safety legislation and equipment standards.

The ubiquity of these devices also suggests they are an industry standard and likely to be treated as such in prosecutions or site inspections.

Relevant Legislation for Worksites in the United States

The Code of Federal Regulation for Healthy and Safety covers safe ground conditions in the following standards:

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- 1. 29 CFR 1926.1400 Subpart CC – Cranes and Derricks in Construction:** Addresses crane safety, including requirements and recommendations for ground conditions.
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- 2. Section 1926.1402(b)** stipulates the following that “The controlling entity must ensure that ground conditions are adequate to support the equipment, including the slope, compaction, and firmness.” Since outrigger pads or mats are a best practice for providing a stable base on less-than-ideal surfaces, their use is implied in this section.

Other standards also mention these. For example:

1. The American Society of Mechanical Engineers standard **ASME B30.5 – Mobile and Locomotive Cranes** has clear specifications regarding ground mats and outrigger pads, including the use of pads, mats, or cribbing to distribute the load from the equipment, especially on soft or uneven ground.
2. The American National Standards Institute’s **ANSI A10.31 – Safety Requirements for Digger Derricks** clarifies that digger derricks require suitable support for outriggers to ensure stability.

Relevant Legislation for Worksites in Canada

The Canadian Standards Association standard **CSA Z150 – Safety Code on Mobile Cranes** also emphasizes the need for stability when using cranes and recommends or requires ground mats or pads when working on soft or unstable ground.

Additionally, there are implied requirements that apply to both in provincial legislation mandating that employers ensure the stability of mobile equipment.

For example:

1. **Alberta’s OHS Code, Part 6 – Cranes, Hoists and Lifting Devices** has multiple sections referencing outriggers as stability controls for mobile cranes, boom cranes and concrete pumps. Article 90, for instance, states that “If outriggers are installed on a mobile crane or boom truck, the employer must ensure the outriggers are extended and supported by solid footings before being used.”
2. In **Ontario Regulation 213/91 – Construction Projects**, the use of outriggers (and implicitly, outrigger pads) is included in several sections. For instance, Section 144 Elevating Work Platforms discusses the need to verify soil firmness when using the outrigger platform in an elevated position. Likewise, section 156 specifies that the outrigger on a hoisting device “shall rest on blocking able to support the crane or other hoisting device and its maximum load without failure and without deformation or settlement which affects its stability.”

Manufacturer Requirements

Crane, aerial lift, and derrick manufacturers usually mandate the use of outrigger pads to meet warranty or safety criteria. And since crawler cranes and rigs often weigh more than the driving or working surfaces support, manufacturers often recommend building a driving surface or work platform to distribute the weight of the equipment.



VM38: VersaMAT® Ground Protection Mat

VersaMAT® is a heavy-duty ground protection mat built for construction, supporting up to 95 tons* while offering a slip-resistant surface for both equipment and foot traffic. Made from 100% recycled HDPE, it's weather-resistant, rigid while still conforming to terrain beneath, and light enough (86 lbs) for easy manual deployment and secure connection with Turn-A-Links.

*Load capacity depends on ground conditions.



CM48: AlturMAT® Ground Protection Mat, 120 Ton Load Capacity, Clear

AlturMAT® is a high-load mat (up to 120 tons*) with aggressive tread on both sides, designed to provide stable access over soft or uneven ground on construction sites. Made from 0.5 in. thick recycled polyethylene, it's rigid while still conforming to terrain beneath, easy to handle by hand (as light as 21.4 lbs), and can be securely connected with Turn-A-Links for trackways or work pads. The transparent design also keeps the mat cooler in hot climates, which will prevent the mat from burning the grass underneath.

*Load capacity depends on ground conditions. Size may vary ±5%.



TTXL: TuffTrak®XL Ultimate Heavy Duty Ground Protection Mat

TTXL 13'5" x 6'8" TuffTrak®XL Heavy Duty Ground Protection Mat - TTXL | Checkers-Safety

TuffTrak®XL is a heavy-duty, solid composite mat made from 100% recycled UHMWPE, built to support heavy equipment and vehicles while offering unmatched durability, traction, and environmental protection on construction and transmission sites. With dual traction surfaces, easy connection options, and a lighter, cost-effective design, it delivers reliable temporary access across tough terrain and sensitive ground conditions.

Warning Whips

Warning whips (also known as safety flags) are tall, flexible poles equipped with a small flag at the top. These are mounted on smaller vehicles and act as a visual marker that is significantly higher than the vehicle's profile, making them more easily visible to large equipment operators. They are an effective and low-cost solution for reducing the risk of collisions on jobsites where heavy machinery operates in close proximity to smaller support vehicles.

Warning whips come in two basic forms:

- 1. Non-Lighted Warning Whips:** Consists of a durable pole with a flag or pennant attached to the top. The pole can be white or sport hi-viz colors and the flags are flexible, since the movement of the flag further enhances its visibility.
- 2. Lighted Warning Whips:** Similar in design but incorporates light sources (typically LEDs) at the top of the pole or wrapped around it. This makes them ideal for fog, dust, wildfire smoke, and low light conditions.

Selecting the Right Warning Whips

While there can be many reasons for choosing one warning whip over another, here are some suggestions to guide your decision:

- 1. Lighting Conditions:** For daylight use in clear weather, non-lighted whips with high-visibility flags are likely sufficient. In poor lighting conditions, such as night shifts, opt for a lighted whip, preferably with strobe lighting to make the flag and vehicle easier to spot.
- 2. Whip Height:** In most cases, smaller vehicles will require longer whips to compensate for their low profiles. The work environment is another factor – make sure the whip is tall enough to be seen behind berms, equipment, and terrain features.
- 3. Durability:** While any whip might do for a one-off project, getting a durable product will ensure that you can use it across multiple jobs. Most warning whip poles are made of fiberglass and have heavy-duty flexible bases to withstand wind, vibration, and the constant movement of the vehicle.
- 4. Identification:** Consider using different lights at the top of vehicles to identify or keep track of key employees on the jobsite.

Standards and Regulations for Warning Whips

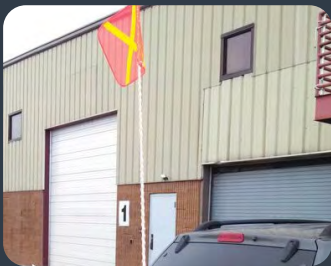
Warning whips are generally not mandated by name in Canadian or U.S. legislation, but their use is implied under requirements for vehicle visibility, blind spot mitigation, and collision prevention. Many large contractors mandate whips through internal policies, often exceeding minimum regulatory requirements.

Relevant Legislation for Worksites in the United States

There is no clear OSHA direction regarding the use of warning whips. However, whips are considered best practice in several industries and implied by the general duty requirement to provide a safe workplace.

Relevant Legislation for Worksites in Canada

Although there is no direct mention of vehicle whips in the legislation, there are many provincial standards that may be relevant. For example, **Alberta OHS Code Part 19 – Powered Mobile Equipment** includes requirements for ensuring that mobile equipment is visible and can be detected, especially when operating near other vehicles or people. It states that if a vehicle can't be equipped with an audible alarm when maneuvering in a direction where the operator has an obstructed view, the operator should follow the direction of traffic control or warning system. In this case, the whip can be understood to be part of the traffic control plan and a warning system at the same time.



8' Lighted Warning Whip, General Purpose , Orange Flag, White X, Threaded Hex Base | FS8XL-O | Checkers-Safety

Our threaded hex base warning whips are built for durability and visibility in tough conditions. Each whip includes a 12" pigtail hot plug, premium fiberglass resin shaft, and a Day Bright™ fluorescent mesh flag with or without a 3M® reflective "X." Heavy-duty wiring resists shorts from extreme temperatures. Available in 3 to 12-foot lengths with orange, green, or yellow flags.



8' Amber LED Wrapped Lighted Warning Whip | Orange Flag, Amber Light | FSLEDA8OYA | Checkers-Safety

Checkers All-Purpose LED Wrapped Lighted Warning Whips enhance visibility for utility vehicles and small trucks on busy construction sites, helping prevent accidents in high-traffic zones. Built with stainless steel components and weather-resistant materials, these durable whips are ideal for tough jobsite conditions. The 8' Amber LED model (FSLEDA8OYA) features an LED-wrapped shaft with clear heat-shrink, a sealed waterproof socket, hex base, and an orange flag with a reflective yellow "X" for maximum visibility.

Wheel Chocks

Trucks that seem stable can still be at risk of shifting or rolling away. Relying on the vehicle's braking system isn't enough. The wheels can roll unexpectedly, potentially resulting in a dangerous or fatal incident.

Wheel chocking is a very simple but effective solution to mitigating this risk. Wheel chocks are wedges or blocks made of durable materials that are placed snugly against a vehicle's tires to prevent unintentional movement and keep the vehicle immobilized.

Chocks are a critical safety device for securing parked vehicles. They also prevent unintentional rolling during loading, unloading, and maintenance activities. They effectively act as a secondary braking device and provide an additional layer of safety should the vehicle's brakes fail or if they are not engaged.

Chocks are typically used in pairs and should be correctly sized for the tire.

Don't Risk It: Why Polyurethane Is the Safe Bet for Wheel Chocks

Wheel chocks are available in a variety of materials. High density polyethylene (HDPE) chocks are generally superior, as they are lightweight, cost-effective, highly visible, and durable enough for equipment up to 400 tons. They also resist UV exposure, chemicals, and moisture, making them ideal for long-term use in harsh environments. Rubber and steel chocks have their uses, but rubber degrades over time and is hard to see in low light, while steel is heavy, expensive, and prone to rust. Wooden chocks should be avoided entirely, especially for heavy-duty applications, as they are susceptible to breaking, weathering, and moisture damage.

Selecting the Right Wheel Chocks

Despite their simplicity, there is no such thing as a universal wheel chock. Here are some of the factors to consider when selecting one that is appropriate for your worksite:

- 1. Vehicle Weight:** If the vehicle starts to roll, its weight will exert pressure on the chock placed behind its wheel. Because of this, heavier vehicles require stronger and more robust chocks.
- 2. Tire Size:** The chock's height should be about one-fourth the height of the tire. Heavy and large tire machinery may require specialized chocks designed for that specific purpose.
- 3. Surface Conditions:** Smooth surfaces have low friction, so they require high-friction chocks, such as those made of rubber. Some chocks feature rubber pad or metal cleat options for slippery surfaces.
- 4. Environmental Conditions:** Polyurethane chocks are more weather resistant than rubber, making them better for outdoor use. Steel chocks are also great for outdoor applications, but should be corrosion-resistant.
- 5. Portability:** Lighter chocks, such as those made of polyurethane, are preferable if they will be placed and removed frequently. Handles are also a great option to facilitate ease of use.
- 6. Visibility:** Polyurethane chocks with hi-viz colors can enhance safety by being more easily noticeable. This comes in handy when doing a quick safety checklist before going under a vehicle or heavy equipment.

Standards and Regulations for Wheel Chocks

Relevant Legislation for Worksites in the United States

Enforcement of wheel chocks is split between Occupational Safety and Health Administration (OSHA) for private worksites and roadways and the Federal Motor Carrier Safety Association (FMCSA) for commercial vehicles on public roadways.

OSHA mandates the use of wheel chocks on worksites and on vehicles that are not on a public road. FMCSA also requires the use of wheel chocks, except when loading or unloading commercial vehicles with air brakes, as the air brakes are deemed sufficient to prevent rollaway.

Relevant Legislation for Worksites in Canada

Several provincial safety regulations make reference to wheel chocks. For example, WorkSafeBC mandates mobile equipment operators to secure against inadvertent movement by setting brakes and chocking wheels when leaving the equipment unattended.



UC1700: General-Purpose Utility Wheel Chock, 30,000 lbs Load Capacity, 27-35 in.

Checkers general-purpose UC1700 utility wheel chocks for ground vehicles are manufactured with highly durable, lightweight polyurethane and are 3rd party tested, certified, and trusted by fleets globally. These chocks are ideal for use with over-the-road trucks, trailers, pickups, and utility vehicles. Rated for vehicles with tire sizes up to 35 in. (88.9 cm) diameter, and gross vehicle operating weight up to 30,000 lbs. (13,636 kg). UC1700 wheel chocks are available in singles or pairs (pairs of wheel chocks are attached with a 48" long piece of 5/8" Nylon rope between the chocks).



MC3011: Heavy-Duty Wheel Chock, 95-165 in. Tires, Up to 800 Ton Capacity

Checkers heavy-duty MC3011 wheel chocks weigh only 32 lbs, making them 24% lighter than the industry standard. They are manufactured with highly durable, lightweight high-density polyethylene for ground vehicles and they feature a larger base that makes them ideal for use with heavy equipment such as haul trucks, loaders, and cranes.



AT3512: All-Terrain Heavy-Duty Wheel Chock with Rubber Pad, 40 Ton Capacity, 28-38 in.

Checkers heavy-duty AT3512 wheel chocks for all-terrain ground vehicles are manufactured with highly durable, lightweight high-density polyethylene (HDPE) and they feature replaceable aluminum base plates with posi-grip cleats or anti-slip rubber traction pads. AT3512 wheel chocks are ideal for underground mining equipment, firefighting vehicles, and large utility vehicles. For vehicles with tire sizes up to 38 in. (96.5 cm) diameter and gross vehicle operating weight up to 80,000 lbs. (36,364 kg).

Building a Sustainable Safety Plan

It takes more than low incident rates to be a safe organizations. It also requires an investment in the right types of protection to ensure that those rates remain low and everyone on site can work without fear of serious injury.

This can be tricky for construction companies. The work takes place in complex and sometimes unpredictable environments that don't always match the ones that were envisioned when developing the project and safety program. So it's important to equip and empower personnel at all levels to respond appropriately when something doesn't go as planned.

Let's go over some of the elements that are essential for achieving this.



Management Commitment

Strong leadership support for safety is essential. But what does that support look like, exactly?

In the case of construction, it includes a willingness to invest in equipment and training to make sure the job is done right. But to be really effective, management also needs to take the right approach when responding to failure.

Company leadership must be aware that failures happen – big and small, from near misses to serious accidents. When those events happen, management has two options: punish anyone involved or learn from the failure. Only a commitment to learning, adapting, and improving will actually drive safety forward.

Employee Involvement

Workers should be encouraged to identify hazards and actively involved in developing solutions. While safety professionals and operations manager have the expertise required to draft projects, safe work practices, and safety manuals, employees have first-hand experience of what it's like on the front lines. They know their job, gear, and the worksite better than anyone else. Getting their input when it comes to implementing safety measures ensures that those measures accurately reflect the nature of the work being done, keeps employees engaged, and avoids the creation of unrealistic documents and demands.



Hazard Identification and Control

Identifying and controlling hazards is a safety professional's bread and butter. But too often, it's approached in a reactive way. Once the safety program is in place, there's a tendency to wait and see if any near misses or injuries reveal gaps in the plan.

To avoid this, it's important to remember that the seeds of all future accidents are planted today. In other words, all the behaviors, acts, and conditions that can result in an incident already exist within the organization. Instead of waiting for the outcome, it's far better to take actively look for the hazards and conditions that could cause problems, report them, and implement solutions before anyone gets hurt.

Training and Upskilling

Training is often the immediate response after an unplanned event. Things went wrong, so everyone has to go over the safe work procedures one more time to make sure it sticks.

But like all things, training should be used more deliberately. Instead of rehashing the basics, it should equip workers new or sharpened skills.

When training employees for essential skills or hazardous tasks, make sure they get valuable knowledge from it and not just a ticket. For essential subjects like fall protection, first aid, and ground disturbance, hands-on and in-person learning is always preferable to completing sessions on a screen. And if your organization outsources training, verify that the course is personalized to the employees and their scope of work.

Going Beyond Slogans: Making Safety a Core Value

The ultimate goal is to integrate safety into the company's core values and operations.

Every organization uses slogans like "Safety is our number one priority!" and uses safety in their messaging and communication. Safety rules, safety practices, safety procedures, safety culture – everything is safety. And I don't know about you, but if I see a food product that states "This has been manufactured in a hygienic facility," I simply don't buy into it. Why? Because hygienic food production should be a core feature of every step of the process given, not a separate consideration. It's the same with safety. Talking a big talk about safety treats it like a separate entity. There shouldn't be a safety culture – safety should already be part of the company's culture.

So, how do we go beyond the slogans and actually bake safety into every aspect of the organization? Here are a few things that will help.

Accountability

Blame is counterproductive, but accountability drives safety forward.

Accountability happens when everyone treats safety as their responsibility, from the latest hire to senior staff members. For front line workers, that means using all the tools at their disposal to keep themselves and their environment safe – from donning PPE and following safety procedures to reporting potentially unsafe working conditions. For those higher up in the organization, that means providing everyone with those tools – whether it's training, equipment, or implementing the latest best practices.

Continuous Improvement

Safety isn't a fixed target. Lowering injury rates on the jobsite is a cause for celebration, but it's not an excuse to stop improving.

Instead of setting a numerical goal to reach, aim to build a culture of continuous improvement. Encourage employees to identify areas for improvement, submit suggestions, and get involved with the development of the safety program.

Numbers can be a bit deceptive. Unsafe jobsites can have a good year with few incidents thanks to sheer luck. A company that maintains safe conditions can still have severe unplanned events. Targets don't always give you the full picture, but implementing new protections and pushing safety forward is always the right move.



Focusing on the Right Metrics

Common safety metrics, such as the Total Recordable Incident Rate (TRIR), DART Rate, or the Experience Modification Rate (EMR), can all provide insights into your organization’s safety performance. But it’s important to understand their limitations and not treat them as the only measures that matter. While useful, these figures represent latent safety performance. Relying on them means you’re reacting to the past rather than preparing for the future.

Instead of placing all your attention on incidents, measure and track the precursors to future incidents – or the conditions that will prevent them. Focus on reporting and addressing unsafe acts, hazardous conditions, and near misses. That way, you’ll get a clearer picture of how safe (or unsafe) your worksites are, as well as the path you can take to improve your organization’s performance.

Instead of celebrating latent measures like “100% Passed Inspections,” reward team members for identifying areas of improvement, engaging in the inspection process, and providing solutions to current issues.

When you place the emphasis on safe behaviors and conditions over incident rates and safety outcomes, you make it clear that safety is simply a part of what your organization does, not a separate consideration that competes with productivity and profitability.



Build a Safer Future

Safety isn't just a regulatory requirement. It's also a fundamental responsibility and a right for every worker.

Over the years, improvements have been made in occupational safety, but the data shows that there's still much work left to be done – especially in high-hazard industries like construction.

With an awareness of emerging risks, the right approach to controlling hazards, and careful selection of safety equipment, we can make the jobsite safer.

Investing in safety reduces overall costs, improves productivity, strengthens an organization's reputation and morale. It's also the right thing to do. Sticking to the status quo won't make your jobsites safer. So, take the next step and start building a safer future.

Safety Solutions You Can Trust

Checkers Safety, a part of Justrite Safety Group, offers proven, high-quality safety products designed to make your site safer and keep projects running smoothly.

Visit checkers.justrite.com to learn more, or get in touch with one of our safety experts to discuss the right solutions for your jobsite.



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