

Winter Construction Site Prep: The Ultimate 2023 Guide

Prepared by Hugg & Hall Equipment Company

Have you ever wondered what steps you need to take to prepare your construction site for colder temps? Snow, ice, and cold conditions can put your employees at risk and damage your equipment. This is our comprehensive guide to reduce the chances of injury and downtime on your jobsite.



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1. MACHINE WINTERIZATION TIPS

Check the fuel filter. A clogged fuel filter can build up moisture and freeze. Empty the water traps in the filters before cold weather arrives. To avoid downtime, keep an extra set of fuel filters in your cab.

Check for water in chain tanks, final drives, swing gear baths, and gear boxes.

Use coolant that complies with ASTM standard D-621, with a freeze point low enough for your climate. If coolant freezes, it can crack the engine block and ruin the engine.

Add fuel conditioner. Fuel conditioner prevents your fuel from freezing. The amount of fuel conditioner you will need varies depending on the brand and model of the machine, so check the manufacturer's recommendation. Always match the fuel conditioner to the type of fuel you're using (e.g. low sulfur).

Check diesel cold start aids. Diesel engines spray ether into the air system to help the engine start in cold weather. For older machines that have ether spray bottles, check the bottle to make sure it isn't empty. For newer machines with an automatic ether system, inspect the connections and hoses for cracks or loose connections.

Check the block heater. Block heaters keep fluids at the optimum temperature and viscosity. If the block heater isn't working, the oil can thicken, making it harder to turn the engine over and causing added stress on the battery. To test that it is working properly, plug in the heater and ensure the hoses are warm.

Inspect air intake pre-cleaners. Snow and ice can collect around dust particles and debris in the pre-cleaner, which allows moisture into the air system. It can cause engine failure. Remove any debris from the pre-cleaner before winter.

Check battery and connections. Battery connection corrosion increases strain on the battery and can drain it. Periodic inspections for corrosion can reduce the chance of having a dead battery.

If your machine is still giving you trouble after you perform these winterization tips, contact our [service department!](#)

2. WINTER STORAGE

Run the engine after cleaning. Run your machine after cleaning the engine and replacing the oil. Running the machine coats the internal parts in a protective film of oil and prevents rust. Pour a 50/50 mixture of water and antifreeze into the coolant system before running to protect the cooling system up to -34°F.



Clean and fully charge batteries, then disconnect the power leads. Never store discharged batteries. Colder temperatures slow the discharge rate of fully charged batteries.

Start machines once a month. If the weather is slightly warmer, take the opportunity to start your machine. Avoid starting machines in extremely cold weather. Find a time when the temperature is above freezing to start the machine and fully warm hydraulics after the engine comes to operating temperatures.

Drain the fuel tank, if possible. If you have a diesel engine, either drain the engine or leave it completely full during the winter months. Draining the fuel tank can be time consuming, but this eliminates the possibility of condensation forming in the fuel tank and spreading. Condensation can clog the fuel filter, fuel lines, carburetors, and injectors.

Never try to break crawler-type machines from a badly frozen situation. It can result in powertrain damage.

3. COLD WEATHER OPERATION

Protect your machinery. If you can't keep your machine inside when it is not in use, keep a water-resistant tarp over the engine. Condensation and moisture can cause problems for the entire engine.

Manage productivity. Most projects take longer during winter. Cold weather makes the earth harder. Frost can penetrate roadways and make utility, road, and crushing jobs much more difficult and time-consuming. Time management is important.

Be prepared to add additional power, heat, and lighting. [Generators](#) and [heaters](#) can keep your space warm and well-lit. [Lights](#) are a great option if you need to work before sunrise or after sunset.

Clean areas designated for snow removal. Clean up debris or equipment that will be hidden by fallen snow. Mark any areas of concern with reflective stakes, so snow removal crews can easily identify and stay away from those areas.

Warm up machines to improve steering response. Let machines come up to operating temperature before working. Steering response on equipment with hydraulic steering may become very slow at low temperatures, even when the correct oils are used.



Check for ice buildup. Check for ice or snow buildup in exhaust or intake if applicable. Inspect and clear any ice or snow from the throttle and break area.

Use standard safety practices. Mount and dismount your machine using three points of contact. Remember that you are working with snow, ice slips and falls are a common cause of injuries. Wear your seatbelt when operating equipment and stay alert.

Take care of groundwork before it freezes. Plan to complete any groundwork before the weather gets bad. You should also be prepared for muddy conditions in any areas where groundwork has not been completed.

4. HOW TO KEEP YOUR EMPLOYEES SAFE

Prevent slips, trips, and falls.

As temperatures approach the freezing point, it's necessary for your company to help prevent slips, trips & falls. Thin patches of ice begin to occur when air temperatures reach the 30s and become dangerous quickly.

Proper PPE (Personal Protective Equipment) plays a significant role in keeping employees safe. Winter PPE includes non-slip footwear, gloves, jackets/coats, and hard-hat liners. This [article](#) from Construct Connect has additional information about winter PPE.

Even when your team has the appropriate PPE, equipment and ladders create additional jobsite hazards in winter. Conduct routine inspections for surface ice on your equipment. If you detect any snow or ice, clear the surface immediately and make sure your team's footwear is free of snow and ice. As always, make sure your team is in their fall-protection gear for additional safety.

Recognize cold-related illness and act quickly.

Know the signs of hypothermia, frostbite, and trench foot and be prepared to administer first aid while you wait for emergency services. Your quick action can save a life.

Hypothermia

Early signs of hypothermia include shivering, loss of coordination, confusion, and fatigue. Prolonged hypothermia leads to blue skin, dilation of the pupils, lowered pulse rate, and a possible loss of consciousness.

If an individual on your team is experiencing the symptoms of hypothermia, alert the job supervisor and request medical assistance. Move the victim into a warm area. Remove any wet clothing and cover the victim with additional clothing or blankets. Warm beverages may help increase their body temperature. Once their body temperature has increased, keep them warm and dry.

Frostbite

Frostbite begins with a loss of feeling and color in affected areas, and can cause permanent damage to body tissue. It can even lead to limb amputation. Frostbite symptoms include reduced blood flow, numbness, tingling, stinging, and pale, waxy skin. The nose, ears, cheeks, chin, fingers, and toes are most commonly affected by frostbite.

If an employee is suffering from frostbite, they should be taken to a warm area. The victim should avoid using the affected appendage and immerse it in warm—never hot—water. If no warm water is available, keep the affected area warm with body heat. Never rub the frostbitten area and do not expose it to direct heat.

Trench Foot

Trench foot is an injury caused by exposure to wet and cold conditions over a prolonged time. If the temperature is below 60°F and the worker's feet are constantly wet, trench foot is a legitimate concern. Symptoms include discoloration, numbness, lower-body cramps, swelling, blisters, and subdermal bleeding.

To care for trench foot, remove the victim's shoes and socks and dry their feet. Request medical attention. The victim should not try to walk, because walking can cause additional damage.



Provide heated break-spaces.

Taking breaks in heated areas and breaks for proper hydration are essential to winter safety. Encourage your employees to take time away from the elements. Breaks are also a convenient time to check for signs of cold-related illness.

To provide your employees with a heated break area, check out these [heaters](#). Make sure to properly vent the area and monitor for carbon monoxide exposure. Read our blog for [more information on using heaters safely](#).

Put emergency kits in work vehicles.

Make sure each of your work trucks and vehicles have winter weather kits. Kits should include water, nutritious snacks, blankets, a flashlight, an ice scraper/snow brush, and more.

5. Key Takeaways

- Take time to winterize your equipment to prevent long-term damage.
- Clean and store your equipment properly.
- Expect and prepare for delayed schedules during winter.
- Train your employees about the potential dangers of working in winter weather.

Winter requires extra preparation, but you can keep your team safe and your equipment in tip-top shape with these tips.

Do you have any additional tips you use to keep your equipment and employees safe? [Let us know!](#)

