



## Cold Weather Safety

Here are some simple reminders for working outdoors in cold weather:

**Keep track of weather forecasts** – Site Supervision should watch the local weather and check the National Weather Service. Know when temperatures and conditions could make outside work dangerous, and prepare accordingly. Ensure your suppliers (concrete, fuel, reinforcing steel, etc.) have safe access to your site – and don't forget to maintain safe access for emergency equipment.

**Provide a warm break area** – Outside workers need a place to take a break from the elements and warm themselves. It can be a heated trailer or a tent with portable heaters. Employers should also be sure supervisors and workers follow proper safety procedures with heating devices. Propane space heaters have open flames – keep combustibles clear of the heating elements. Remember too, an open flame generates carbon monoxide, so always ensure proper ventilation when using this type of heater. Keep employees away from operating equipment such as welding machine exhaust or air compressors to keep warm.

**Remove snow and ice** - Before work is started on a site, ensure snow is removed, salt or sand is put down and large patches of ice are chipped away. It may be a hassle, but making these efforts will greatly reduce the risk of injury. Kitty litter is also a great way to make paths and walkways safer by improving traction. Areas around grout plants and concrete pumps need additional care due to washout activities.

**Inspect and prepare vehicles and equipment** - Before heading into the cold season, all equipment and vehicles should be inspected to determine if they are fully functioning, and properly winterized for safe cold weather operation. Thawing or heating cold engines, oil tanks, hydraulic cylinders, frozen grease with a torch can be dangerous. Use extreme caution to prevent melting of O-rings, wires, computer sensors, etc. – not to mention open flames near the fuel tanks. Consult the manufacturers equipment manuals for proper cold weather operating procedures.

### PREVENTION

**Avoid damage to your muscles** - Do a 5-minute warm up and then a few mild stretches before starting work. Pulled muscles are more likely to occur in cold weather because your muscles tighten up and contract in the cold. Don't stretch a cold muscle without warming up!

**Drink plenty of water** - Strange as it sounds, you can become dehydrated in cold weather if you don't replace fluids. Dehydration reduces blood flow to the skin, which can lead to cold injury. If a person doesn't get up in the night at least once to urinate then they are not drinking enough. Urine should be a pale yellow, straw-like color, not dark. Eat properly with plenty of carbohydrates and fats for energy and warmth prior to beginning work.

**Get enough sleep** - Outdoor work is hard physically and cannot be done on only a few hours of sleep. Being well rested will make employees feel energized and alert to hazards that always exist on the jobsite – cold or not.

**Head Covers** - Wear hard hat liners designed to be worn and attached to your hard hat. These typically extend down the back of the neck are the best choice – do not wear a hard hat over a hoody or knit cap. Peripheral vision is greatly reduced, and the hard hat will not fit well – thus no offering proper protection. A ski mask, or balaclava, will offer even more protection for your face against the cold.

**Dress warmly and stay dry** - Keep hands, feet, and head covered, and wear several layers of loose-fitting clothing. If working with water when drilling or grouting, wear a rain suit, rubber gloves and rubber boots as your outermost layer. If your clothing becomes wet, immediately change to avoid cold-weather injuries like hypothermia (the condition of having an abnormally low body temperature) and frostbite.

Hand protection is vital. Mittens are warmer than gloves, but can limit dexterity. If possible, wear a pair of gloves under a pair of mittens for warmth, and remove mittens to use gloved fingers as needed. Protect feet and toes. Wear two layers of socks — cotton underneath a pair of wool or thermal socks is best — with a pair of well-fitted boots that come above the ankle.

Effects of cold weather on your body can include:

**Heart attacks** - These increase in frequency during the winter months usually affecting those who already have an underlying health problem. A drop in temperature concentrates blood flow in the body core, increasing blood pressure so placing more strain on the heart, also your body works harder to generate additional heat when it is cold.

**Frost nip** - happens when part of your body becomes so cold that the blood flow slows because that area is losing too much heat and is starting to be sacrificed (yes you should be worried by this prospect!). It can be identified because that area of skin becomes a very un-natural pale color as there is little or no blood passing through it. The nose, ears, cheeks, fingers and toes are first affected. It is not so easy to spot in yourself, so you should watch for it in your companions and you should all be made aware and know to look out for it. If you spot frost nip, then the affected area should be warmed up with a gently placed glove or similar - don't rub! - this can damage already fragile cells. If spotted quickly frost nip can be dealt with easily, the effects are readily revisable and not permanent.

**Frost bite** – is a more serious situation where ice crystals form inside body cells killing them in the process. Superficial frostbite is recoverable though can be intensely painful whereas deep frostbite can lead to the loss of fingers, toes and even parts of limbs. Make sure you watch for frost nip and do something about it immediately. If you suspect frostbite move to somewhere warmer if possible and seek medical attention immediately - don't rub the affected area to stimulate circulation!

**Hypothermia** - A serious situation (to the point of potential fatality) where the temperature of the body core falls from what it should be at 37C to 35C (98.6 to 95 F) or less. Your body will let you know this is happening with plenty of warning from shivering, numb extremities, reduced dexterity and just feeling miserably cold. The response should be to warm up, put more clothes on or go indoors. A fall in core temperature will slow reaction times and impair judgement – not good when working on a construction site.

Working outdoors during the winter months is a normal occurrence, so it is easy for workers to forget the dangers and consequences associated with it. Make sure to consider these cold weather safety tips while working in the workplace to better protect yourself against the elements while still maintaining safety, and productivity.