Editor’s note: PASS ON EACH ISSUE OF THIS NEWSLETTER TO EVERYONE WITH SAFETY RESPONSIBILITIES AT YOUR COMPANY.

Preventing Frostbite and Trench Foot

Key Points

- Working in cold or cool temperatures, especially when combined with wind and moisture, can lead to serious health problems, including frostbite and trench foot.
- The body’s reaction when exposed to cold environments is to maintain its core temperature, which requires shifting blood away from extremities, including the hands, feet, nose, and ears. These parts of the body become susceptible to frostbite (freezing of skin and underlying tissue), and amputation could be the only treatment. If moisture is involved, trench foot (death of skin tissue on the feet) could occur, even at temperatures as high as 60 F.
- Risks for both these injuries can be reduced significantly with a cold-stress-prevention program, engineering controls, and personal protective equipment.

Checklist for Employers, Supervisors, and Crew Leaders

- Know that while federal OSHA doesn't have a specific standard covering work in cold environments, you are required to provide work spaces free from recognized hazards, including those related to cold weather. Comply with any state or local regulations as well.
- Develop and communicate a written cold-stress-prevention program outlining steps to reduce workers’ risks of cold-related injuries and illnesses.
- See OSHA’s Wind Chill Temperature Guide for Employers to better understand how temperature and wind speed can combine to increase the risk of cold-related injuries.
- Measure and record jobsite temperature and wind speed at least every four hours when temperatures are below freezing.
- Know whether workers have health conditions or take medications that reduce their bodies’ ability to regulate temperature.
- Use engineering controls such as portable shelters with electric heaters, hand warmers, and foot warmers to reduce the risk of cold-related injuries. Hand warmers, which can be placed in gloves, and foot warmers can provide heat of more than 100 F for up to 10 hours and cost less than $2 per pair.
- Cover metal tool handles with thermal insulating materials when temperatures are below freeezing.
- Have employees take breaks in a heated area, such as a truck cab or heated portable shelter. OSHA recommends providing heated shelter for employees who experience prolonged exposure to wind chill temperatures equivalent to 20 F or lower.
- Give workers not acclimated to cold temperatures more frequent breaks in warm areas until their bodies adjust.
- Educate employees about and make sure they wear clothing and gear to protect them from cold temperatures, wind, and moisture.
- Provide ice and snow-removal crews with waterproof, chemical-resistant, insulated rubber gloves to prevent frostbite and skin inflammation.

Employee Dos and Don’ts
Do:

- Dress in multiple layers of warm, breathable clothing.
- Wear insulated, water- and wind-proof gloves designed for cold weather.
- Put on two pairs of socks—a polyurethane layer next to your skin, covered by wool socks—or wear moisture-wicking, cold-weather socks.
- Wear waterproof, insulated boots.
- Tell your supervisor about any medication you take. Some medications interfere with the body's ability to retain heat.
- Take breaks in a heated area as directed by your crew leader/supervisor.

Don't:

- Forget to protect all your skin. Headgear should cover your ears and neck and be made of wool or a knit material with a wind-proof outer shell. Balaclavas, bomber hats, and hardhat liners work well. Also, wear a knit mask to protect your face.
- Wear tight-fitting clothing because it can restrict blood circulation throughout the body.
- Continue working if moisture contacts your body. Change into dry gear immediately. Store a plastic bag with extra gloves, hat, socks, and a coat in the vehicle that takes you to jobsites.