

# Cold-Induced Illness on Construction Sites



We tend to think of cold stress as a nuisance, an extra hurdle to our daily lives but it's a physiological battle for energy, or more accurately, an energy crisis. It is the systematic reaction when your body realizes it is losing heat quicker than it can produce it.

There is no federal OSHA temperature threshold that triggers mandatory protection. No prescribed break schedule. No required engineering controls. Just the general duty clause, a broad requirement to provide a workplace free from recognized hazards, and the burden of proof to demonstrate you understood the risks and did something about it.

When cold stress takes down a worker on your site, the question is not whether OSHA issued a citation; it's whether you demonstrated due diligence in preventing a recognized hazard.

## Hypothermia:

The warning signs are known as “the umbles”: stumbles, mumbles, fumbles, and grumbles. Slurred speech. Confusion. Poor coordination. It can look like exhaustion – or worse, someone who is intoxicated.

### Prevention on the Jobsite:

- Buddy system: critical, as no one can self-diagnose brain failure
- Mandatory warm-up breaks in heated spaces
- Warm, sweetened liquids like broth or sugar water (avoid caffeine)
- Schedule work during the warmest parts of the day
- Pack extra clothing: shirts, pants, jackets, hats, socks – even underwear

## Frostbite:

Frostbite is not just “really cold fingers,” it is the freezing of skin and the underlying tissue. Early signs include numbness, a white or grayish-yellow tint, and a firm, waxy texture to the skin. It typically shows up on fingers, toes, ears, cheeks, and noses.

### Prevention:

- Below 0°F: mittens instead of gloves (fingers share heat)
- Chemical-resistant gloves when working with fuel or solvents
- Multiple glove pairs so workers can rotate when they become damp
- Insulated, waterproof boots
- Hard-hat liners, neck gaiters, face protection
- Never allow bare-hand contact with cold metal

## Trench Foot:

Trench foot is a non-freezing injury caused by prolonged exposure to wet, cold conditions. It can happen in temperatures as high as 60°F if feet stay wet. Circulation shuts down. Tissue begins to suffocate. And because feet go numb, workers may keep going about their day not realizing the risk.

### High-Risk Scenarios:

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- Concrete pours and finishing
- Groundwork after rain or snow
- Heavy exertion in insulated boots (sweat builds up)
- Excavation below grade

### Mitigating Trench Foot on Jobsites:

- Waterproof boots rated for winter conditions
- Moisture-wicking socks (wool or synthetic - NEVER cotton)
- Boot dryers in break areas
- Mandatory sock changes if feet are damp
- Spare socks on site

If trench foot is suspected, remove boots and socks immediately. Dry feet gently, elevate them, and avoid extreme heat. Medical attention is critical as damage often is not immediately visible.

## Chilblains:

Chilblains are caused by repeated cycles of cold exposure and subsequent rewarming. Through quick trips into the trailer, followed by leaving for the job site. Blood vessels constrict, then dilate, over and over again, leading to inflammation.

### Chilblain Prevention Tactics:

- Gradual warming during breaks
- Keep skin dry
- Avoid rapid temperature swings
- Do not wear gloves or boots that restrict circulation
- Cover exposed skin completely

Cold injuries are fast, quiet, and unforgiving. They test your judgment before your strength and exploit complacency every chance they get. Bundle up. Pack extra gear. Watch your crew. And remember, it is often the job that was supposed to take “20 minutes – 30 at most” that can change everything.

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