

Employer Guidance

PROTECTING OUTDOOR WORKERS FROM EXTREME WEATHER

EXTREME COLD

WE ARE YOUR DOL



This document offers New York State Department of Labor’s (NYSDOL) guidance for some of the best ways to protect outdoor workers during cold weather. According to the Center for Disease Control & Prevention (CDC), employers should avoid having outdoor workers exposed to extremely cold temperatures if possible. When cold environments cannot be avoided, employers should follow key safety recommendations to protect workers from cold stress.

NEW YORK STATE EMPLOYERS SHOULD TAKE THESE 3 STEPS TO PROTECT OUTDOOR WORKERS FROM EXTREME COLD (BASED ON THE WIND CHILL):



ALLOW FOR
REST & RELIEF



DEVELOP AND
PROVIDE **TRAINING**



DEVELOP AND
PROVIDE A **PLAN**

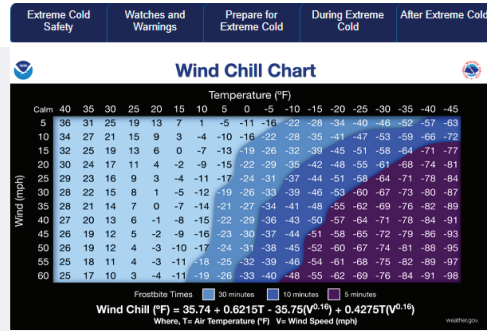
REGARDLESS OF THE WEATHER, EMPLOYERS SHOULD PROVIDE EACH OUTDOOR EMPLOYEE 32 OUNCES OF DRINKING WATER PER HOUR.

Employers should encourage workers to drink water regularly, even when they do not feel thirsty. Dehydration can occur in a cold environment and can increase the risk of hypothermia. When it is cold outside, workers should avoid caffeine and instead opt for **warm** water and/or electrolyte drinks.

The water should be provided at no cost to workers, available to workers at all times, potable, and as close to the worksite as practicable.

HOW TO MEASURE WIND CHILL

It is best for employers to evaluate the wind chill to determine what worker protections are most appropriate. Wind chill is the temperature the body feels when air temperature and wind speed are combined. For example, when the air temperature is 40°F, and the wind speed is 35 mph, the effect on the exposed skin is as if the air temperature is 28°F.



Employers can determine the wind chill using the National Weather Service Wind Chill Calculator: weather.gov/safety/cold-wind-chill-chart. With this tool, one may input the air temperature and wind speed (measured on-site or found through a common weather app), and it will calculate the wind chill temperature.

See the following pages for more detail on each recommended step. In a unionized workplace, employers must follow any collective bargaining agreement currently in place.

REST & RELIEF

Employers should provide warmth, rest, and appropriate Personal Protective Equipment (PPE) when it is cold outside.

WARMTH & REST

Employers should limit workers' time in the cold whenever possible. When feasible, employers should schedule outdoor maintenance and repair jobs during warmer months and/or, if it is a cold day, the warmer part of the day. If working in the cold is unavoidable, employers should give workers frequent breaks in warm areas. Employers should base work/rest schedules on the temperature and wind speed at the outdoor work site. The American Conference of Governmental Industrial Hygienists (ACGIH) recommends the following work/rest schedules based on wind chill:

Equivalent Chill Temperature Chart
(Work/Warm-up Schedule for Four-Hour Shifts)

		Actual Temperature Reading (Degrees Fahrenheit)											
		50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
Estimated Wind Speed (In mph)	Equivalent Chill Temperature (Degrees Fahrenheit)												
	Calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-28	-38	-47	-57	-68	
10	40	28	16	4	-9	-24	-33	-46	-58	-70	-83	-95	
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112	
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-121	
25	30	16	0	-15	-29	-44	-59	-74	-88	-104	-118	-133	
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140	
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145	
40	26	10	-6	-21	-37	-53	-69	-85	-100	-116	-132	-148	
PERSONAL APPAREL NEEDED		EXTREME WEATHER CONDITIONS – PROTECTIVE OUTERWEAR REQUIRED											
(wind speeds greater than 40 mph have little additional effect.)		LITTLE DANGER Potential for a false sense of security.			INCREASING DANGER Danger of freezing of exposed flesh within one minute.				GREAT DANGER Flesh may freeze within 30 seconds.				
Work/Warm-up Schedule for a Four-Hour Shift													
		55 min work	10 min rest	55 min work	10 min rest	55 min work	10 min rest	55 min work	10 min rest	55 min work			
		30 min work	10 min rest	30 min work	10 min rest	30 min work	10 min rest	30 min work	10 min rest	30 min work			
Non-emergency work should cease													

NOTE: An employee experiencing any of the initial symptoms of frostbite or hypothermia must immediately move to a warm location and notify her or his supervisor.

*Extrapolated from the ACGIH's Threshold Limit Values and Biological Exposure Indices

CLOTHING & PERSONAL PROTECTIVE EQUIPMENT

Dressing properly is extremely important in preventing cold stress in workers. Below is an overview of recommendations related to clothing and PPE protection during extreme cold:



Layers

Workers should wear at least three layers of loose-fitting clothing. Workers should wear the following three layers in the cold for the most protection:

- An inner layer of wool, silk or synthetic to keep moisture away from the body
- A middle layer of wool, fleece, or synthetic to provide insulation even when wet
- An outer protective layer that resists or repels wind and rain while allowing some ventilation to prevent overheating



Hats

Workers should wear a hat, hood, or hard hat winter liner to help keep the body warmer. For workers who need to wear a hard hat, it is recommended to use a “winter liner” specifically designed to be compatible with the hard hat’s protective properties.



Gloves

Workers should wear insulated (and, if necessary, water-resistant) gloves when windchill temperatures are below 60.8 degrees Fahrenheit for sedentary work, below 39.2 degrees Fahrenheit for light work, and below 19.4 degrees Fahrenheit for moderate work. If temperatures reach below 0 degrees Fahrenheit workers should wear mittens, which are more protective than gloves, if possible.



Socks & Shoes

Footwear should be large enough to allow wearing either one thick or two thin pairs of sweat wicking socks without restricting blood flow. Workers should wear insulated and waterproof footwear, especially if working in wet conditions and/or standing water.



Keep Clothing Dry

It is imperative to keep all clothes dry in the cold, and to change clothes if they get wet from either outdoor factors or from sweat.



WORKER & SUPERVISOR TRAINING

Employers should train outdoor workers and supervisors annually and before extreme cold exposure.

AN EFFECTIVE TRAINING WILL INCLUDE:



The signs and symptoms of common cold-related illness



Information on the employer's acclimatization and emergency/ first aid plans



An overview of the rest and relief measures that the employer will provide to workers during extreme cold



An overview of workers' rights to not be retaliated against for reporting any workplace health or safety concern

Signs and Symptoms of common cold-related illnesses, and basic first aid measures, can be found on the National Institute of Occupational Safety & Health (NIOSH) webpage: on.ny.gov/cdcextremecold



PLANNING & PREPAREDNESS

Employers should acclimate workers to the cold and make a written plan for how they handle acclimatization, extreme cold preparedness, and emergency response.

ACCLIMATIZATION: EASING INTO WORK

New and returning workers need to build tolerance to cold weather (acclimatize) and take frequent breaks. New employees whose bodies have not had time to adjust to working in the cold are most vulnerable.

RECOMMENDED ACCLIMATIZATION SCHEDULE

DAY ONE	On "Day One" in the cold, a new or returning worker should work 20-25% of a shift at full intensity
WEEK ONE	Increase the time working at full intensity by 20-25% a day
14 DAYS	Closely watch all new/returning workers for 14 workdays

Another way to put it: For an employee that works 8-hour shifts, start them off with **two** hours the first day, then **four** hours the second day, **six** hours the third day, and finally **eight** hours by the fourth day.

WRITE A PLAN ON PROTECTIONS & EMERGENCY RESPONSE

Employers should write down their plans for employee rest and relief, training, acclimatization, and emergency protocols. The plan should be provided to workers during their onboarding and during their annual training on extreme cold. The written plan can include elements such as, but not limited to:



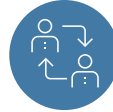
Signs and symptoms of common cold-related illnesses and basic first aid that workers and supervisors can easily follow



A “buddy system” during times of extreme weather



Methods of monitoring the conditions that workers are exposed to



A two-way communication system with workers to ensure supervisors are keeping track of all workers when the wind chill is very low



Procedures for activating the illness prevention and emergency response plans



Site-specific emergency response procedures
Employers should call 911 if symptoms of cold-related illness are present



Methods of alerting affected staff to hazard exposure

Where applicable, these written plans should be negotiated in good faith and implemented under existing collective bargaining agreements. Also, employers should keep daily records of all cold-related illnesses and injuries, regardless of severity, as they occur.

NYSDOL encourages all employers to utilize this guidance as needed. Extreme weather hazards in the workplace correlate to higher accident rates, illness, injuries, and deaths. They can also have an impact on a business through increased workers’ compensation claims, insurance costs, worker utilization of Paid Sick Leave, and overall decreased or diminished worker productivity.

Employers: You cannot retaliate against workers for reporting any workplace health or safety concern. For more information on worker rights visit the NYSDOL Public Employee Safety & Health (PEOSH) Bureau: dol.ny.gov/public-employee-safety-health or the Federal Occupational Safety & Health Administration (OSHA) webpages: [osha.gov/](https://www.osha.gov/).