EHS Guidance Working Outdoors In Cold Weather

Purpose

Exposure to cold weather is not just uncomfortable, it is potentially dangerous. Whenever outdoor temperatures drop significantly below normal and wind speed increases, heat more rapidly leaves the body. It's important to know how to protect yourself from cold when you must work outdoors—be prepared by wearing warm clothing and be aware that cold temperatures can lead to serious health problems.

EHS recommends taking the "Working Outdoors" <u>safety training</u> to be prepared for working outdoors in various conditions.

Who is at risk?

Anyone who works in a cold environment may be at risk of cold-related illnesses and injuries, or "cold stress." Workers who may not be able to avoid working outdoors in cold weather could include security personnel, snow cleanup crews, sanitation workers, campus mail personnel, facilities staff, and many others. Workers face increased risks when they take certain medications, are in poor physical condition or suffer from illnesses such as diabetes, high blood pressure, or heart disease.

Protect yourself: Be prepared and be aware

When cold environments cannot be avoided, university faculty, staff, and students should follow these recommendations to protect themselves from cold stress:

Be prepared by wearing warm clothing that is right for the weather

- Wear several layers of loose clothing; layering provides better insulation.
- Protect your ears, face, hands, and feet by wearing a hat and waterproof gloves and boots.
- Carry cold weather gear, such as extra socks, gloves, hats, jacket, blankets, a change of clothes and a thermos of hot liquid.

Be prepared to limit time spent outdoors

- Take breaks in warm locations, such as inside a vehicle or other sheltered or heated areas.
- Workers may also need to limit their time outside on extremely cold days, consider scheduling cold jobs for the warmest part of the day and rotate crews for long jobs.

Be aware that cold temperatures can lead to illness and injury

- Pay attention to warning signs and symptoms of hypothermia, frostbite, and other coldrelated illnesses and injuries.
- Monitor your physical condition and that of your coworkers.
- Immediately report signs and symptoms of cold-related illnesses and injuries to your supervisor.
- Tell your supervisor if you are not dressed warmly enough.
- Work with a buddy when possible.

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Cold-related illnesses and injuries

These weather-related conditions may lead to serious health problems:

Hypothermia

- When exposed to cold temperatures, your body begins to lose heat faster than it is produced. Prolonged exposure to cold will eventually use up your body's stored energy. The result is hypothermia, or abnormally low body temperature.
- Early symptoms of hypothermia include shivering, fatigue, loss of coordination, confusion, or disorientation.
- Hypothermia affects the brain, making the victim unable to think clearly or move well.

Frostbite

- Many parts of the body are prone to frostbite, including your fingers, toes, nose, and ears. Frostbite happens when a part of the body freezes, damaging the tissue.
- Warning signs of frostbite include numbness or tingling, stinging, or pain on or near the affected body part.
- Avoid frostbite by being aware of the weather and wearing protective clothing such as warm gloves, insulated shoes, and warm hats.
- If you think you have frost bite warm the area slowly and seek medical attention.



		Temperature (°F)																	
	Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
	5	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63
	10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72
	15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77
	20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81
(h	25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
Ĕ	30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
Wind (mph)	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
W	40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91
	45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93
	50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95
	55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97
	60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-98
Frostbite Times 30 minutes 10 minutes 5 minutes																			
Wind Chill (°F) = 35.74 + 0.6215T - 35.75(V ^{0.16}) + 0.4275T(V ^{0.16}) Where, T= Air Temperature (°F) V= Wind Speed (mph) Effective 11/01/01																			

For more information, please check out the CDC factsheet:

https://www.cdc.gov/cpr/documents/hypothermia-frostbite 508.pdf

Reference: The National Institute for Occupational Safety and Health (NIOSH)

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