



# Minnesota Electrical Association

# Electrical

# Toolbox Talks

---

## Cold Stress

- Emergencies from cold temperatures can be the result of both local cooling (affecting one area of the body) or general cooling (affecting the entire body).
- The first line of defense to eliminate problems from the cold is setting guidelines for what temperature is too cold for employees. Remember, the effect of cold is greatly increased by wind chill. (See the wind chill chart on the next page). In addition, the Cold Stress card located at [www.oroSHA.org/pdf/pubs/336.pdf](http://www.oroSHA.org/pdf/pubs/336.pdf) can be copied and given to your employees to use as a guide.
- The second line of defense is to dress in layers and wear clothing that wicks moisture from the body, including a hat. It is estimated 40% of heat loss occurs from a person's head. Note: if you must work outside in extreme temperatures, never work alone.

Frostbite and hypothermia are cold-related emergencies.

### **FROSTBITE - Signs and Symptoms:**

Stages of overexposure to cold for body extremities:

- Frostnip: Affected area is red, then white. Upon entering a warm environment, the person may complain of a burning or tingling sensation. Many of us may have experienced this feeling after spending too much time outside in cold weather. If symptoms do not improve after a short time, seek emergency care for frostbite.
- Frostbite: Skin surface is hard. Tissue under the skin is soft. The skin color will appear white and waxy. This person should be treated by emergency personnel. Note: warming an area that is already frozen may further injure the area if done inappropriately. Follow instructions from emergency personnel.
- Freezing: Skin surface and tissue under skin is hard. Skin color will be blotchy white, grey, or blue. Again, this person should be treated by emergency personnel. Follow instructions from emergency personnel.

# Cold Stress

(continued)

## HYPOTHERMIA - Signs and Symptoms:

Stages of hypothermia:

- Mild: the person may shiver and have numbness involving various body parts. Take the person to a warm environment. If general warming does not improve symptoms, contact emergency personnel.
- Severe: the person may be drowsy, have slow breathing and slow pulse. Emergency personnel should be contacted immediately.
- Extreme: this person will be unconscious, possibly have no pulse or respirations, and be cold to the touch. Emergency personnel should be contacted immediately.

### First Aid for Hypothermia

- Prevent further cold exposure
- Remove wet clothing
- Initiate CPR, only if required
- Re-warm by covering with blankets, sleeping bags and with body-to-body contact
- Handle gently during treatment and evacuation

## Windchill Table

If you're unprepared for the cold, temperature and wind can put you at risk for hypothermia and frostbite. The table below shows the risk of frostbite on unprotected skin.

Wind (mph)	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	-69	-75
10	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72	-78	-84
15	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77	-83	-89
20	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81	-87	-93
25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84	-90	-96
30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87	-93	-99
35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89	-95	-101
40	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91	-97	-103
45	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93	-99	-105
50	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95	-101	-107
55	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-95	-101	-107
60	25	17	10	3	-4	-11	-19	-26	-33	-40	-48	-55	-62	-69	-76	-84	-91	-97	-103	-109

**Frostbite:** 30 minutes 10 minutes 5 minutes

Consult your Right to Know written program or Minnesota OSHA for further information on this topic.