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### **Cold Weather Facts**

#### **Firefighter Protective Clothing**

- Provide firefighters with proper PPE for the environment.
- Issue special equipment such as mittens, helmet liners, wool undergarments, and other cold weather gear when needed.
- Carry extra gloves, hoods, and other equipment on apparatus.
- Have proper provisions in the station to dry equipment properly.
- May need full helmet liners in very cold weather.
- Standard fire fighting protective hoods may not provide protection against wind or water.
- Firefighting gloves are not designed for cold weather operations.
- Boots do a good job of protecting against cold and water.
- Dress in layers, appropriate to the given conditions.
- Remove some layers, if safe to do so, when doing heavy work.
- Stay dry.
- Wear your helmet or another hat at all times.
- Avoid working in standing water, rain, or overspray from hoselines.
- Rotate from operational positions to rest/rehab positions on a frequent basis.
- Keep it Clean – The dirtier clothing is, the less it will protect against cold weather.

- Avoid Overheating – Firefighters who overheat and sweat excessively will ultimately be more susceptible to hypothermia.
- Wear it Loose and in Layers – Air insulation between the layers of clothing is the most effective insulation.
- Keep it Dry – Water causes cooling 25 times faster than dry air. Replace wet clothing when extended operations are required in cold weather.
- Encourage members to monitor each other.
- Cover exposed skin.
- Rotate to rehab more frequently.

### **Cold Weather Firefighting Operations**

- Provide training concerning frostbite and hypothermia.
- Keep pumps and drain lines dry. Be sure to close them before leaving the warmth of the station, or they will freeze open and you will have water everywhere.
- Open all compartment doors and inlet and outlet caps, and make sure they're dry.
- Constantly re-circulate water in pumps at the scene. To prevent freezing and damage, any lines not being used should be left partially open or drained and rolled on scene.
- Support all hoselines with cribbing to prevent freezing down.
- Give careful consideration when responding to areas with steep or sloping terrain. Make sure you turn the wheels into the curb when you park. Don't forget to chock the wheels.
- Turn off retarders during slippery road conditions.
- Keep sand or salt on every apparatus to reduce slippery surfaces.
- If a firefighter is wet or wading in water, heat loss from the body may be accelerated by as much as 25 times.

The NWS Windchill Temperature (WCT) index uses advances in science, technology, and computer modeling to provide an accurate, understandable, and useful formula for calculating the dangers from winter winds and freezing temperatures. The index:

- Calculates wind speed at an average height of five feet, typical height of an adult human face, based on readings from the national standard height of 33 feet, typical height of an anemometer
- Is based on a human face model
- Incorporates heat transfer theory, heat loss from the body to its surroundings, during cold and breezy/windy days
- Lowers the calm wind threshold to 3 mph
- Uses a consistent standard for skin tissue resistance

Assumes no impact from the sun (i.e., clear night sky).

**Note:** *Windchill Temperature is only defined for temperatures at or below 50 degrees F and wind speeds above 3 mph. Bright sunshine may increase the wind chill temperature by 10 to 18 degrees F.*



# Wind Chill Chart



		Temperature (°F)																	
		Calm	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40
Wind (mph)	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
	25	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84
	30	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87
	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89
	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

$$\text{Wind Chill (°F)} = 35.74 + 0.6215T - 35.75(V^{0.16}) + 0.4275T(V^{0.16})$$

Where, T= Air Temperature (°F) V= Wind Speed (mph)

Effective 11/01/01

## PLACE ON YOUR LETTERHEAD

For Immediate Release: DATE  
Contact: NAME, PHONE #

### **Fire Chief Issues Cold Weather Fire Safety Warning**

Fire officials issued a fire safety warning as we enter the first period of extremely cold weather this winter. “The Sub-freezing temperature dip this weekend will tax our heating and electrical systems as we try to stay warm, so a little caution can help you make you it safely through the extreme weather,” said [TOWN] Fire Chief [FullNAME].

#### **Make Sure Smoke Alarms and CO Alarms are Working**

“One of the simplest steps for safety you can take is to make sure your smoke and carbon monoxide alarms are working. They will give you the earliest possible warning that something is wrong so you can escape safely,” said Chief [LAST NAME].

“Keep thermostats set at the lowest comfortable temperature as furnaces may struggle to keep the house warm; wear warm clothes and put an extra blanket on the bed,” said [LAST NAME]. “If you run out of oil, or lose power, consider going to the home of a friend or relative who has heat rather than relying on alternative heating sources,” [s]he added.

#### **Space Heaters**

“Cold snaps like this is when we tend to see space heater fires and one of every 16 space heater fires in the past five years has caused a fire death,” [s]he said. “Space heaters need space, so use them in a 3-foot circle of safety, free of anything that can catch fire.” [S]He added, “Space heaters are not designed to replace your central heating system, they are only designed to provide a little extra heat on a temporary basis. So be sure to turn them off when you leave room or go to bed at night.”

It is best to plug space heaters and other heat-generating appliances directly into the outlet. Overloaded extension cords cause many space heater fires. If you must use an extension cord, make sure it is rated for the same wattage as the appliance and use only one.

#### **Unvented Kerosene Heaters Illegal in MA**

The use of unvented space heaters that use a liquid fuel such as kerosene inside homes and buildings is illegal in Massachusetts. They pose an extreme risk of carbon monoxide poisoning as well as a fire risk.

#### **Wood, Coal and Pellet Stoves**

“Already this winter heating season, Massachusetts has seen numerous serious fires from the improper disposal of ashes from fireplaces, wood and pellet stoves,” said [LAST NAME]. “A single ember can remain hot for days, so put ashes in a metal container with a lid away from the

house, the garage, the deck,” [s]he added. Several recent fires started with ashes put into plastic bags, cardboard boxes, and plastic trash bins, in the garage, or under the deck.

“Don’t over fire your woodstove. An overtaxed woodstove can easily start a chimney fire taking advantage of creosote build-up or minor cracks in the flue or causing a breakdown in the chimney liner,” said [LAST NAME]. Heating appliances are the leading cause of carbon monoxide in the home and the risk increases when they are working harder. For more information go to [www.mass.gov/keepwarmkeepsafe](http://www.mass.gov/keepwarmkeepsafe).

### **Preventive Maintenance**

It’s never too late to have a licensed professional clean and inspect your furnace or chimney. A professional can clean the chimney of creosote, and check for cracked or broken mortar. An efficiently running furnace is cheaper to run. Heating equipment is the leading cause of carbon monoxide in the home.

*(Include these paragraphs only if you have a power outage or a lot of snow)*

### **Prevent Carbon Monoxide Poisoning**

“Carbon monoxide (CO) poisoning is a great risk at times like these,” said [LAST NAME]. “Using propane or charcoal grills or generators inside the garage – even with the door open – poses a serious risk of CO poisoning,” [s]he warned. For the same reason, never use a gas oven for heat.

### **Generator Safety**

Use generators outdoors away from windows, doors and vents with the exhaust pointed away from the home. Don’t use them inside the garage, basement or partially enclosed areas no matter how well ventilated. Never plug a generator into a wall outlet. This practice known as “backfeeding” can cause an electrocution risk to utility workers and others served by the same transformer. Plug appliances directly into the generator or use a heavy-duty outdoor-rated extension cord. Make sure the entire cord is free of cuts or tears and plug has all three prongs including the grounding pin. Fire officials recommend placing the container on the ground to avoid any static electrical charge igniting vapors.

Gasoline should be stored outside the home in small quantities in approved containers. Remember to allow equipment to cool before refueling to prevent vapors from ignited.

### **Clear Snow from Furnace and Dryer Vents**

Keep outside furnace, hot water and dryer vents clear of drifting snow, to prevent flue gases from backing up into the home and creating a carbon monoxide hazard.

### **Clear Snow from Vehicle Tailpipes**

During a recent blizzard, a New Jersey mother and child died from carbon monoxide while sitting inside a running vehicle where the tailpipe was clogged with snow. A similar tragedy happened in Boston in 2013. Doctors from the Boston Public Health Commission have created an educational video on CO poisoning that addresses this particular risk.

<http://youtu.be/7Yy9zXsaeCA>.

**Use Flashlights and Battery-Operated Candles**

Use flashlights and battery-operated candles for safety. If you must use flame candles, remember to burn them inside a one-foot circle of safety free of anything that can burn. Place them on a non-combustible surface or in the sink; blow them out when you leave the room or go to bed; and use jar candles or place a globe over stick candles. Keep pets and children away from candles.

**Consider Going to a Shelter to Charge Up Cell Phones for Emergency Calls**

Many people may lose the ability to make emergency calls when cell phone batteries and the battery-backup for fiber optic telephone/cable/Internet services become depleted. "I would urge people without lights and heat to consider staying with friends and family have power or go to an emergency shelter for a short while, even if it's just to charge up cell phones, get a hot meal and warm up," [LNAME] said. "

*(Continue release from here if omitting the previous 7 paragraphs)*

**Prevent Freezing Pipes**

Let water drip a trickle to prevent pipes from freezing and open cupboards under sinks to let heat circulate around the pipes unless there are small children in the home.

**Protect Sprinklers Systems**

In order to protect sprinkler systems, check on your building during to the cold snap, especially if you don't have a low temperature alarm. Make sure that all portions of the building remain heated to at least 40°F and not exposed to freezing conditions. Setting the thermostat higher -50-60 °F during this cold snap will help make sure pipes in concealed areas stay warm.

For more information on winter heating safety go to <http://www.mass.gov/keepwarmkeepsafe>.



DEPARTMENT OF FIRE SERVICES

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# SPECIAL OPERATIONS

The Department of Fire Services Special Operations team can be activated to Support the Fire Service in the Commonwealth 24 hours a day seven days a week.



For further information  
or  
for a scheduled event

Please call the  
Special Operations  
Office at

**(978) 567-3171**

or  
visit the  
DFS web site  
at

**[www.mass.gov/dfs](http://www.mass.gov/dfs)**

For an immediate response  
of any of the resources

- » Incident Support Unit
- » Rehab Unit
- » Incident Support Trailer

**Call**  
Massachusetts Emergency  
Management Agency  
Headquarters  
(MEMA)

**(508) 820-2000**

You will be asked for:

- » The vehicle(s) needed
- » City or town of the incident
- » Contact name and number
- » Nature of the incident
- » Street address  
(where the vehicle[s] should respond to)

Once a response has been activated the requesting agency will be contacted with an ETA of the vehicle(s) and directions for the incoming vehicles to the incident.