



# WIND CHILL CHART

NOAA ARL/SORD  
NNSS Weather

		Temperature(°F)																				
		Calm	50	45	40	35	30	25	20	15	10	5	0	-5	-10	-15	-20	-25	-30	-35	-40	-45
Wind (MPH)	5	48	42	36	31	25	19	13	7	1	-5	-11	-16	-22	-28	-34	-40	-46	-52	-57	-63	
	10	46	40	34	27	21	15	9	3	-4	-10	-16	-22	-28	-35	-41	-47	-53	-59	-66	-72	
	15	45	38	32	25	19	13	6	0	-7	-13	-19	-26	-32	-39	-45	-51	-58	-64	-71	-77	
	20	44	37	30	24	17	11	4	-2	-9	-15	-22	-29	-35	-42	-48	-55	-61	-68	-74	-81	
	25	43	36	29	23	16	9	3	-4	-11	-17	-24	-31	-37	-44	-51	-58	-64	-71	-78	-84	
	30	42	35	28	22	15	8	1	-5	-12	-19	-26	-33	-39	-46	-53	-60	-67	-73	-80	-87	
	35	41	35	28	21	14	7	0	-7	-14	-21	-27	-34	-41	-48	-55	-62	-69	-76	-82	-89	
	40	41	34	27	20	13	6	-1	-8	-15	-22	-29	-36	-43	-50	-57	-64	-71	-78	-84	-91	
	45	40	33	26	19	12	5	-2	-9	-16	-23	-30	-37	-44	-51	-58	-65	-72	-79	-86	-93	
	50	40	33	26	19	12	4	-3	-10	-17	-24	-31	-38	-45	-52	-60	-67	-74	-81	-88	-95	
	55	40	32	25	18	11	4	-3	-11	-18	-25	-32	-39	-46	-54	-61	-68	-75	-82	-89	-97	
	60	39	32	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

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

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

The Wind Chill Temperature 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 5 feet (the typical height of an adult human face) based on wind observations from the national standard observation anemometer height of 33 feet (10 meters).
- Is based on a human face model.
- Incorporates heat transfer theory: heat loss from the body to it's surroundings during cold and breezy/windy days.
- Calm winds are defined to be 3 mph or less.
- Uses a consistent standard for skin tissue resistance.
- Assumes no impact from the sun (i.e. Assumes a clear night sky)

NOTE: Wind chill temperature is only defined for temperatures at 50 °F and below and wind speeds greater than 3 mph. Bright sunshine may decrease the wind chill effect (increase the perceived temperature) by 10 °F to 18 °F.