

TABLE 1. WINTER CLIMATIC CONDITIONS^a—(CONTINUED)

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5	COL. 6	COL. 7	COL. 8	COL. 9	COL. 10	COL. 11
STATE	STATION ^b	ELEVATION ^c FT	PERIOD OF RECORD ^d	LOWEST TEMP. ON RECORD ^e °F	AVERAGE ANNUAL MIN. TEMP. ^f °F	AVERAGE WINTER TEMP. ^g °F	DESIGN DRY-BULB TEMP. ON TAC 97% BASIS ^h °F	WIND VEL. AT DESIGN TEMP. ^h MPH	DESIGN DRY-BULB TEMP. IN COMMON USE ⁱ °F	AVERAGE WIND VEL. DEC. JAN. FEB. MPH
Ore.	Medford	A 1343	1929-1947	-3			23	4.3		7.3
	Portland	C 98	1874-1947	-2	18	46.1			10	
	Portland	C 25	1940-1947	-3		44.3	22	8.0		
	Roseburg	C 523	1877-1947	-6	19	46.7			10	3.9
Pa.	Curwensville	A 2219	1943-1947	-10		33.7	0	13.5		
	Erie	C 771	1873-1946	-16	-3	37.3			-5	13.6
	Erie	C 736	1935-1939 ^d				6	12.1		
	Harrisburg	C 335 ^e	1888-1938 ^d	-14	3	39.9			0	7.6
	Harrisburg	A 339	1935-1939 ^d				7	9.0		
Pa.	Philadelphia	C 200	1871-1947	-11	6	42.7			0	11.0
	Philadelphia	A 18	1940-1947	-1		41.4				
	Pittsburgh	C 929	1875-1947	-20	-2	40.9			0	11.6
	Pittsburgh	A 1284	1935-1947	-16		38.7				
	Reading	C 311	1913-1947	-14		41.2	6	12.1		
	Scranton	C 877	1901-1947	-19		37.7			-5	7.6
	Sunbury	A 448	1935-1939 ^d				7	7.1		
R. I.	Block Island	C 46	1881-1947	-10		40.1			0	20.6
	Providence	C 77	1904-1947	-17		37.5			0	12.1
S. C.	Charleston	C 59	1871-1947	-7	22	57.4			15	10.5
	Charleston	A 51	1940-1947	-14		55.0	26	6.9		
	Columbia	C 401	1887-1947	-2	19	54.4			10	8.0
	Columbia	A 227	1939-1947	-9						
	Greenville	C 1006 ^e	Up to 1946	-5		49.2			10	8.4
S. D.	Huron	C 1342	1881-1938	-43	-26	28.2			-20	10.7
	Huron	A 1287	1938-1947	-30					-20	8.0
	Rapid City	C 3209	1887-1947	-34	-21	33.4				
	Rapid City	A 3220	1939-1947	-27						
Tenn.	Chattanooga	C 952	1879-1947	-10	9	50.3			10	7.7
	Chattanooga	A 675	1940-1947	-6		47.8	19	6.2		
	Knoxville	C 1024	1871-1942	-15	2	47.9			0	7.2
	Knoxville	A 1007	1942-1947	-1		46.8				
	Memphis	C 348	1872-1941	-9	9	51.1			0	9.3
	Memphis	A 267	1941-1947	-1		50.0	19	8.9		
	Nashville	C 714	1871-1947	-13	5	48.5			0	9.8
	Nashville	A 610	1939-1947	-15			14	7.3		
Texas	Abilene	C 1748	1885-1944	-6		53.9			15	10.1
	Abilene	A 1756	1940-1947	-9			20	10.4		
	Amarillo	C 3636	1892-1941	-16	0	45.2			-10	12.1
	Amarillo	A 3595	1941-1947	-7			11	12.9		
	Austin	C 625	1897-1942	-1		58.4			20	8.3
	Austin	A 625	1942-1947	-13						
	Brownsville	C 140	1922-1943	-12	29	66.8			30	10.4
	Brownsville	A 25	1943-1947	-30						
	Corpus Christi	C 21	1887-1942 ^d	-11		63.7			20	11.0
	Corpus Christi	A 45	1943-1946 ^d	-23						
	Dallas	C 732	1913-1940	-3	13	55.6			0	10.6
	Dallas	A 520	1940-1947	-5			23	8.8		
	Del Rio	C 1020	1905-1947	-12		60.6			15	8.0
	El Paso	C 3792	1880-1942	-5	16	53.5			10	9.0
	El Paso	A 3956	1939-1947	-11			26	8.6		
	Fort Worth	C 708	1888-1939 ^d	-8	12	55.1			10	10.5
	Fort Worth	A 728	1940-1947	-4						
	Galveston	C 128	1871-1947	-8		61.7			20	11.2
	Galveston	A 9	1939-1947	-14						
	Houston	C 198	1888-1947	-5	22	61.0			20	10.5
	Houston	A 73	1932-1947	-5		60.1	33	9.2		
	Palestine	C 555	1881-1947	-6		57.1			15	8.0
	Port Arthur	C 64	1917-1947	-11		61.2			20	10.7
	Port Arthur	A 21	1944-1947	-24						
	San Antonio	C 770 ^e	1835-1941	-4	21	60.6			20	8.3
	San Antonio	A 896	1942-1947	-17			32	7.6		
	Waco	A 513	1931-1947	-7			26	11.6		
	Waco	A 2811	1935-1939 ^d	-11			23	8.5		
	Waco	A 5095	1935-1939 ^d	-17			-2	7.7		
Utah	Modena	C 5472	1901-1947	-32	-15	36.3			-15	9.0
	Salt Lake City	C 4346	1874-1947	-20	-2	40.0			-10	7.8
	Salt Lake City	A 4254	1928-1947	-30		38.3	7	7.4		
Vt.	Burlington	C 409	1884-1943	-29	-17	31.5			-10	11.6
	Burlington	A 335	1943-1944	-23						
Va.	Cape Henry	C 24	1874-1947	-5		49.2			10	14.0
	Lynchburg	C 644	1874-1944	-7	8	46.8			5	8.1
	Lynchburg	A 951	1944-1947	-7						
	Norfolk	C 91	1871-1947	-2	15	49.3			15	12.1
	Richmond	C 150	1897-1947	-3	10	47.0			15	8.1
	Richmond	A 172	1929-1947	-12			15	7.1		
	Roanoke	A 1194	1935-1939 ^d	-12			21	8.2		
Wash.	Ellensburg	A 1731	1935-1939 ^d			35.2	1	3.8		

TABLE 1. WINTER CLIMATIC CONDITIONS^a—(CONTINUED)

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5	COL. 6	COL. 7	COL. 8	COL. 9	COL. 10	COL. 11
STATE	STATION ^b	ELEVATION ^c FT	PERIOD OF RECORD ^d	LOWEST TEMP. ON RECORD ^e °F	AVERAGE ANNUAL TEMP. ^f °F	AVERAGE WINTER TEMP. ^g °F	DESIGN DRY-BULB TEMP. ON TAC 97% BASIS ^h °F	WIND VEL. AT DESIGN TEMP. ^h MPH	DESIGN DRY-BULB TEMP. IN COMMON USE ⁱ °F	AVERAGE WIND VEL. DEC. JAN. FEB. MPH
Wash.	North Head	C 199	1884-1947	-11	24	46.4			20	16.1
	Seattle	C 104	1890-1947	-3	20	46.3			15	9.8
	Seattle	A 47	1928-1947	-3		45.1	24	6.3		
	Spokane	C 2030	1881-1941	-30	-5	37.7			-15	6.2
	Spokane	A 1974	1941-1947	-7			4	5.1		
	Tacoma	C 270	1897-1947	-7		44.9			15	8.0
	Tacoma	C 110	1883-1947	-7		45.4			15	18.9
	Tatoosh Is.	C 1160	1933-1946	-24		39.8			-5	4.1
	Yakima	C 1068	1944-1947	-4						
W. Va.	Elkins	C 1969 ^e	1898-1944	-28	-8	39.4			-10	6.2
	Parkersburg	C 685	1888-1947	-27	-1	42.9			-10	17.2
Wisc.	Green Bay	C 598	1886-1947	-36	-18	29.8			-20	10.5
	La Crosse	C 725	1872-1947	-43	-21	31.7			-25	9.3
	La Crosse	A 677	1943-1947	-28		30.5	-17	6.9		
	Madison	C 1008	1858-1947	-29		31.4			-15	10.1
	Madison	A 884	1935-1939 ^d				-8	9.1		
	Milwaukee	C 744	1870-1947	-25	-12	33.4			-15	12.1
	Milwaukee	A 707	1927-1947	-29		29.0	-6	11.9		
Wyo.	Milwaukee	C 6144	1873-1935	-18	-18	33.6			-15	13.3
	Cheyenne	A 6161	1935-1947	-34			-3	11.1		
	Cheyenne	C 5448	1891-1946	-40	-12	30.0			-18	3.9
	Lander	A 5568	1946-1947	-14						
	Rock Springs	A 6746	1932-1942	-33		30.1	-7	9.1		
Alta.	Edmonton	2219 ^e	Up to 1943	-57	-41	22.8			-40	7.5
B. C.	Vancouver	22 ^e	Up to 1943	-2	-13	42.6			10	4.5
	Vancouver	228 ^e	Up to 1943	-2	19	44.0			5	12.6
Man.	Winnipeg	786 ^e	Up to 1943	-54	-38	17.2			-35	10.1
N. B.	Fredericton	164 ^e	Up to 1943	-35	-25	27.5			-20	9.1
N. S.	Yarmouth	136 ^e	Up to 1943	-35	-25	27.5			-20	9.1
Ont.	London	912 ^e	Up to 1943	-27	-14	34.8			-5	14.3
	Ottawa	294 ^e	Up to 1943	-35	-24	32.6			-5	10.3
	Port Arthur	644 ^e	Up to 1943	-40	-29	22.0			-20	8.4
	Toronto	379 ^e	Up to 1943	-26	-11	32.7			-30	13.6
P.E.I.	Charlottetown	188 ^e	Up to 1943	-27	-13	29.4			-10	9.8
Que.	Montreal	187 ^e	Up to 1943	-29	-18	27.9			-15	11.3
Sask.	Quebec	296 ^e	Up to 1943	-34	-23	24.5			-20	13.3
	Prince Albert	1414 ^e	Up to 1943	-70	-47	16.0			-45	5.1
Y. T.	Dawson	1062 ^e	Up to 1943	-68	-54	1.9			-45	3.7
Newf.	St. Johns	428 ^e	Up to 1943	-21	-5	31.5			-10	12

^a United States Data compiled from U. S. Weather Bureau Records for years indicated, and Canadian data from Meteorological Service of Canada corrected to 1946.

^b Col. 2. The stations followed by letter A are airport stations, all others are city office stations and are followed by letter C.

^c Col. 3. The elevations marked e are ground elevations of the station. All other elevations given are the actual elevations of the thermometer bulb above mean sea level.

^d Col. 4. The periods of record indicated apply only to the lowest temperature ever recorded shown in Col. 5, and generally extend from a summer month of the first year indicated through the spring months of the last year indicated. The periods marked with d terminated in December of the year indicated.

^e Average of readings of one lowest temperature obtained for each year.

^f For period October to April, inclusive.

^g It should be noted that Col. 8 applies only to airports, as these data for city stations are not available at this time. The temperature shown is the minimum hourly out-door temperature which has been equalled or exceeded 97 1/2 percent of the total hours in December, January and February for the period of record. It is pointed out that in most cases the airport stations are outside of the city and these data would apply primarily to rural areas.

^h Col. 9 indicates the average wind velocity which occurred at temperatures the same as, and lower than, the temperatures shown in Col. 8.

ⁱ Col. 10 records design temperatures in use by A.S.H.V.E. Members as reported by Chapter Secretaries for the various stations. Where these were not available the design temperatures from an ASHRA publication and various other sources have been inserted.

^j The wind velocities indicated in Col. 11 were furnished by the U. S. Weather Bureau and corrected through Feb. 1948.

^k A bulletin prepared by A.S.H.V.E. and U. S. Weather Bureau for annual weather data of city of Detroit indicates 6 as design temperature based on Dec. to March, inclusive.

^l Computed for Reading by Karl Shelley and O. F. Smith.

words, a person may feel warm or cool at the same dry-bulb temperature, depending on the relative humidity and air motion. The optimum winter