

TABLE 1. WINTER CLIMATIC CONDITIONS—(CONTINUED)

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5	COL. 6	COL. 7	COL. 8	COL. 9	COL. 10
STATE	STATION ^b	ELE- VATION ^c	PERIOD OF RECORD ^d	LOWEST TEMP. ON RECORD ^e	AVERAGE ANNUAL MIN. TEMP. ^f	DESIGN DRY-BULB TEMP. ON TAC 97% BASIS ^g	WIND VEL. AT DESIGN TEMP. ^h	DESIGN DRY-BULB TEMP. IN COMMON USE ⁱ	Avg. WIND VEL.-DEC. JAN.-FEB. ^j
		FT		°F	°F	°F	MPH	°F	MPH
Pa.	Philadelphia.....CO	200	1871-1947	-11	6			0	11.0
	Philadelphia.....AP	18	1940-1947	1					
	Pittsburgh.....CO	929	1875-1947	-20	-2			0	11.6
	Pittsburgh.....AP	1284	1935-1947	-16		6	12.1	0	
	Reading.....CO	311	1913-1947	-14		9k		0	9.0
R. I.	Scranton.....CO	877	1901-1947	-19				-5	7.6
	Scranton.....AP	448	1935-1939d				7.1		
	Block Island.....CO	46	1881-1947	-10				0	20.6
S. C.	Providence.....CO	77	1904-1947	-17	1			0	12.1
	Charleston.....CO	59	1871-1947	7	22			15	10.5
	Charleston.....AP	51	1940-1947	14		26	6.9	10	8.0
S. D.	Columbia.....CO	401	1887-1947	-2	19			10	8.0
	Columbia.....AP	227	1939-1947	-5				10	8.4
	Greenville.....CO	1006 ^h	Up to 1946	-43	-26			-20	10.7
Tenn.	Huron.....AP	1342	1881-1938	-30					8.0
	Huron.....AP	1287	1938-1947	-34	-21			-20	8.0
	Rapid City.....CO	3109	1888-1947	-34					7.7
Tenn.	Rapid City.....AP	3220	1939-1947	-27				10	7.2
	Chattanooga.....CO	952	1879-1947	-10	9	19	6.2	10	9.3
	Chattanooga.....AP	675	1940-1947	-6				0	9.8
Texas	Knoxville.....CO	1024	1871-1942	-16	2			0	10.1
	Knoxville.....AP	1007	1942-1947	-1				-5	12.1
	Memphis.....CO	348	1872-1941	-9	9			-10	8.3
Texas	Memphis.....AP	267	1941-1947	1		19	8.9	0	9.8
	Nashville.....CO	714	1871-1947	-13	5			15	10.1
	Nashville.....AP	610	1939-1947	-15		14	7.3	15	10.1
Texas	Abilene.....CO	1748	1885-1944	-6		20	10.4	-5	12.1
	Abilene.....AP	1756	1940-1947	-9				-10	8.3
	Amarillo.....CO	3686	1892-1941	-16	0			20	10.4
Texas	Amarillo.....AP	3393	1941-1947	-1		11	12.9	20	8.3
	Austin.....CO	625	1897-1942	-1				20	8.3
Texas	Austin.....AP	625	1942-1947	13				30	10.4
	Brownsville.....CO	140	1922-1943	12	29			20	11.0
Texas	Brownsville.....AP	25	1943-1947	-30				0	10.6
	Corpus Christi.....CO	21	1887-1942d	11				15	8.0
Texas	Corpus Christi.....AP	45	1943-1946d	23				10	9.0
	Dallas.....CO	732	1913-1940	-3	13	23	8.8	15	8.0
Texas	Dallas.....AP	520	1940-1947	5				10	9.0
	Del Rio.....CO	1020	1905-1947	-12				20	11.2
Texas	El Paso.....CO	3792	1880-1942	-5	16			20	10.5
	El Paso.....AP	3956	1939-1947	11		26	8.6	20	11.2
Texas	Fort Worth.....CO	708	1898-1939d	-8	12			20	10.5
	Fort Worth.....AP	728	1940-1947	4				20	10.5
Texas	Galveston.....CO	128	1871-1947	-8				20	11.2
	Galveston.....AP	8	1939-1947	14				20	10.5
Texas	Houston.....CO	198	1888-1947	5	22			15	8.0
	Houston.....AP	73	1932-1947	5		33	9.2	20	10.7
Texas	Palestine.....CO	535	1881-1947	-6				15	8.0
	Port Arthur.....CO	64	1917-1947	-11				20	10.7
Texas	Port Arthur.....AP	21	1944-1947	24				20	8.3
	San Antonio.....CO	770 ^h	1885-1941	4	21			20	8.3
Texas	San Antonio.....AP	800	1942-1947	17		32	7.6	11.6	
	Waco.....CO	513	1931-1947	7		26	11.6	8.5	
Utah	Wink.....AP	2811	1935-1939d	-32	-15			-15	9.0
	Millford.....AP	5095	1935-1939d	-17		-2	7.7	-10	7.8
Utah	Modena.....CO	5472	1901-1947	-32	-2			-10	11.6
	Salt Lake City.....CO	4346	1874-1947	-20		7	7.4	-10	14.0
Vt.	Salt Lake City.....AP	4254	1928-1947	-30	-17			5	8.1
	Burlington.....CO	409	1884-1943	-29				15	12.1
Va.	Burlington.....AP	335	1943-1944	-23				15	8.1
	Cape Henry.....CO	24	1874-1947	5				10	14.0
Va.	Lynchburg.....CO	644	1874-1944	-7	8			5	8.1
	Lynchburg.....AP	951	1944-1947	7				15	12.1
Va.	Norfolk.....CO	91	1871-1947	-2	15			15	8.1
	Richmond.....CO	180	1897-1947	-3	10			15	8.1
Wash.	Richmond.....AP	172	1929-1947	-12		15	7.1	20	16.1
	Reconoke.....CO	1194	1935-1939d			21	8.2	15	9.8
Wash.	Ellensburg.....AP	1731	1935-1939d			1	3.8	20	6.2
	North Head.....CO	199	1884-1947	11	24			15	8.0
Wash.	Seattle.....CO	104	1890-1947	3	20			15	18.9
	Seattle.....AP	47	1928-1947	3		24	6.3	-5	4.1
Wash.	Spokane.....CO	2030	1881-1941	-30	-5			15	8.0
	Spokane.....AP	1974	1941-1947	-7		4	5.1	15	18.9
W. Va.	Tacoma.....CO	279	1897-1947	7				15	8.0
	Tatoosh Is.....CO	110	1853-1947	7				15	8.0
	Yakima.....CO	1160	1938-1946	-24				15	8.0
W. Va.	Yakima.....AP	1066	1944-1947	-4				10	6.2
	Elkins.....CO	1969 ^h	1898-1944	-23	-8			10	7.2
	Parkersburg.....CO	685	1888-1947	-27	-1			10	7.2

TABLE 1. WINTER CLIMATIC CONDITIONS—(CONCLUDED)

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5	COL. 6	COL. 7	COL. 8	COL. 9	COL. 10
STATE	STATION ^b	ELE- VATION ^c	PERIOD OF RECORD ^d	LOWEST TEMP. ON RECORD ^e	AVERAGE ANNUAL MIN. TEMP. ^f	DESIGN DRY-BULB TEMP. ON TAC 97% BASIS ^g	WIND VEL. AT DESIGN TEMP. ^h	DESIGN DRY-BULB TEMP. IN COMMON USE ⁱ	Avg. WIND VEL.-DEC. JAN.-FEB. ^j
		FT		°F	°F	°F	MPH	°F	MPH
Wis.	Green Bay.....CO	598	1886-1947	-36	-18			-20	10.5
	La Crosse.....CO	725	1872-1947	-43	-21			-25	9.3
	La Crosse.....AP	677	1943-1947	-28		-17	6.9	-15	10.1
	Madison.....CO	1008	1858-1947	-29		-8	9.1	-15	12.1
	Madison.....AP	884	1935-1939d			-6	11.9	-15	13.3
Wyo.	Millwaukee.....CO	744	1870-1947	-25	-12			-18	3.9
	Millwaukee.....AP	707	1927-1947	-29		-7	9.1		
	Cheyenne.....CO	6144	1873-1935	-38	-18				
	Cheyenne.....AP	6161	1935-1947	-34					
	Lander.....CO	5448	1891-1946	-40	-12				
Wyo.	Lander.....AP	5568	1946-1947	-14					
	Rock Springs.....AP	6746	1932-1942	-33					
Alta.	Edmonton.....	2219 ^h	Up to 1943	-57	-41			-40	7.5
	Vancouver.....	225 ^h	Up to 1943	2	13			10	4.5
B. C.	Victoria.....	228 ^h	Up to 1943	-2	19			5	12.6
	Winnipeg.....	786 ^h	Up to 1943	-54	-38			-35	10.1
N. B.	Fredericton.....	164 ^h	Up to 1943	-35	-25			-20	9.1
	Yarmouth.....	136 ^h	Up to 1943	-12	0			-5	14.3
Ont.	London.....	912 ^h	Up to 1943	-27	-14			-5	10.3
	Ottawa.....	294 ^h	Up to 1943	-35	-24			-20	8.0
P. E. I.	Port Arthur.....	644 ^h	Up to 1943	-40	-29			-30	8.0
	Toronto.....	379 ^h	Up to 1943	-26	-11			-10	13.6
Que.	Charlottetown.....	186 ^h	Up to 1943	-27	-13			-10	9.8
	Montreal.....	187 ^h	Up to 1943	-29	-18			-15	11.3
Sask.	Quebec.....	296 ^h	Up to 1943	-34	-23			-20	13.3
	Prince Albert.....	1414 ^h	Up to 1943	-70	-47			-45	5.1
Y. T.	Dawson.....	1002 ^h	Up to 1943	-68	-54			-45	3.7
	St. Johns.....	428 ^h	Up to 1943	-21	-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 letters AP are airport stations, all others are city office stations and are followed by letters CO.

^c Col. 3. The elevations marked c 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 d terminated in December of the year indicated.

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

^f It should be noted that Col. 7 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 per cent 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.

^g Col. 8 indicates the average wind velocity which occurred at temperatures the same as, and lower, than the temperatures shown in Col. 7.

^h Col. 9 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.

ⁱ The wind velocities indicated in Col. 10 were furnished by the U. S. Weather Bureau and corrected through Feb. 1948.

^j The bulletin published by A.S.H.V.E. for annual weather data of Detroit indicates 6 as design temperature.

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

INSIDE TEMPERATURES

The inside air temperature which must be maintained within a building is understood to be the dry-bulb temperature at the breathing line, 5 ft above the floor, or the 30-in. line, and not less than 3 ft from the outside walls. Inside air temperatures usually specified, vary in accordance with the use to which the building is to be put and Table 2 presents values which conform to good practice.

The proper dry-bulb temperature to be maintained depends upon the relative humidity and air motion, as explained in Chapter 12. In other words, a person may feel warm or cool at the same dry-bulb temperature,