TABLE 2. SUMMER CLIMATIC CONDITIONS[a] (CONCLUDED)

Suggested Design Wet-Bulb and Dry-Bulb Temperatures

Col. 1 State	Col. 2 Station[b]	Col. 3 Elevation[c] Ft	Col. 4 Period of Record[d]	Col. 5 Highest Temp. Ever Recorded[d] °F	Col. 6 Design Dry-Bulb Temp. on T.A.C. 2½% Basis[e] °F	Col. 7 Design Dry-Bulb Temp. in Common Use[f] °F	Col. 8 Design Wet-Bulb Temp. in Common Use[f] °F	Col. 9 Average Summer Wind Velocity[g] Mph
S. C.	Columbia CO	401	1887–1947	106	...	95	75	...
	Columbia AP	227	1939–1947[d]	104	...			
S. D.	Huron CO	1342	1881–1938[d]	111	...	95	75	10.3
	Huron AP	1287	1938–1947	110	...			
	Rapid City CO	3309	1888–1947	106	...	95	70	7.9
	Rapid City AP	3220	1939–1947	108	...			
Tenn.	Chattanooga CO	952	1879–1947	103	...	95	76	5.6
	Chattanooga AP	675	1940–1947	105	94			
	Knoxville CO	1024	1871–1942[d]	104	...	95	75	5.7
	Knoxville AP	1007	1942–1947	102	94			
	Memphis CO	348	1872–1941[d]	106	...	95	78	7.3
	Memphis AP	267	1941–1947	105	96			
	Nashville CO	714	1871–1947	106	...	95	78	...
	Nashville AP	610	1939–1947	104	...			
Texas	Abilene CO	1748	1885–1944[d]	111	...	100	74	...
	Abilene AP	1756	1940–1947	109	97			
	Amarillo CO	3686	1892–1941	107	...	100	72	11.8
	Amarillo AP	3595	1941–1947	106	96			
	Austin CO	625	1897–1942	109	...	100	78	...
	Austin AP	625	1942–1947	104	...			
	Brownsville CO	140	1922–1943[d]	102	...	100	80	7.0
	Brownsville AP	25	1943–1947	100	...			
	Corpus Christi CO	21	1887–1942	105	...	95	80	...
	Corpus Christi AP	45	1943–1946	101	...			
	Dallas CO	732	1913–1940	110	...	100	78	9.3
	Dallas AP	520	1940–1947	109	99			
	Del Rio CO	1020	1905–1947	111	...	100	78	...
	El Paso CO	3792	1887–1942	106	...	100	69	8.4
	El Paso AP	3956	1939–1947	104	97			
	Fort Worth CO	708	1898–1939	112	...	100	78	9.5
	Fort Worth AP	728	1940–1947	110	...			
	Galveston CO	128	1871–1947	101	...	95	80	9.7
	Galveston AP	9	1939–1947	101	...			
	Houston CO	198	1888–1947	108	...	95	80	8.8
	Houston AP	73	1932–1947	105	93			
	Palestine CO	555	1881–1947	108	...	100	78	...
	Port Arthur CO	64	1917–1947	102	...	95	79	...
	Port Arthur AP	21	1944–1947	98	...			
	San Antonio CO	770	1885–1941[d]	107	...	100	78	7.8
	San Antonio AP	800	1942–1947	104	98			
	Waco AP	513	1931–1947	111	98	...	...	...
	Wink AP	2811	1935–1939	110	99	...	...	...
Utah	Milford CO	5095	1935–1939	103	94	...	...	...
	Modena CO	5472	1901–1947	101	...	95	65	...
	Salt Lake City CO	4346	1874–1947	105	...	95	65	9.8
	Salt Lake City AP	4254	1928–1947	106	95	90	73	8.5
Vt.	Burlington CO	409	1884–1943[d]	100	...	...	...	...
	Burlington AP	335	1943–1947	101	...	95	78	...
Va.	Cape Henry CO	24	1874–1947	104	...	95	75	...
	Lynchburg CO	644	1874–1944	106	...	...	...	...
	Lynchburg AP	951	1944–1947	100	...	95	78	10.1
	Norfolk CO	91	1871–1947	105	...	95	78	6.4
	Richmond CO	180	1897–1947	107	92	...	...	...
	Richmond AP	172	1929–1947	104	90	95	76	...
	Roanoke AP	1194	1935–1939	103	90	...	...	...
Wash.	Ellensburg AP	1731	1935–1939	105	...	85	65	7.7
	North Head CO	199	1884–1947	97	...	85	65	...
	Seattle CO	104	1890–1947	100	81	...	...	6.5
	Seattle AP	47	1928–1947	99	...	98	65	...
	Spokane CO	2030	1881–1941[d]	108	92	...	...	...
	Spokane AP	1974	1941–1947	104	...	85	64	...
	Tacoma CO	279	1897–1947	98	...	...	...	...
	Tatoosh Island CO	110	1883–1947	88	...	95	65	...
	Yakima CO	1160	1928–1946	110	...	...	...	...
	Yakima AP	1066	1944–1947	103	...	95	75	5.2
W. Va.	Parkersburg CO	685	1888–1947	106	...	95	75	9.2
Wisc.	Green Bay CO	598	1872–1947	104	...	95	75	6.4
	La Crosse CO	725	1943–1947	108	...	...	...	...
	La Crosse AP	677	1858–1947	96	91	95	75	7.9
	Madison CO	1008	1935–1939	107	...	...	...	...
	Madison AP	884	1870–1947	106	89	95	75	9.8
	Milwaukee CO	744	1927–1947	105	...	...	...	...
	Milwaukee AP	707	1873–1935	106	87	95	65	9.2
Wyo.	Cheyenne CO	6144	1935–1947	100	...	...	...	...
	Cheyenne AP	6161	1891–1946	100	89	95	65	...
	Lander CO	5448	1936–1947	102	...	...	...	...
	Lander AP	5568	1932–1942	97	...	...	...	...
	Rock Springs AP	6746		98	87	...	...	...

NOTES FOR TABLE 2

[a] Data compiled from U. S. Weather Bureau Data and various other sources.

[b] Column 2. The station designation AP or CO indicates airport or city office station, respectively.

[c] Column 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, corrected to 1948.

[d] The periods of record indicated apply only to the highest temperature ever recorded shown in Column 5, and do not necessarily include all of the summer months of the first year indicated. The last year indicated includes July or August, except those marked d which terminate prior to July of that year.

[e] It should be noted that Column 6 applies only to airports, as these data for city stations are not available at this time. The temperature shown is the maximum hourly outdoor temperature which has been equalled or exceeded 2½ percent of the total hours of June, July, August and September for the 5-year period 1935–1939, inclusive. It is pointed out that in most cases the airport stations are outside of the city, and that these data would apply primarily to rural areas.

[f] Columns 7 and 8 record wet and dry-bulb temperatures in use by A.S.H.V.E. Members as reported by Chapter Secretaries for various stations. Where such values were not available, the design temperatures published by A.C.R.M.A., or obtained from various other sources, have been inserted.

[g] The average wind velocities indicated in Column 9 were furnished by the U. S. Weather Bureau, corrected to 1947. In general these velocities are averages for the months of June through September.

[h] The bulletin published by A.S.H.V.E. for the annual weather data of Detroit indicates 73 F as the design wet-bulb temperature which has been equalled or exceeded 5 percent of the hours for period 1935–1939.

[i] Blank spaces indicate data not available.

TABLE 3. VENTILATION STANDARDS[a]

Application	Smoking	Cfm per Person[b] Recommended	Cfm per Person[b] Minimum[c]	Cfm per Sq Ft of Floor[b] Minimum[c]
Apartment Average	Some	20	10	....
Deluxe	Some	30	25	0.33
Banking Space	Occasional	10	7½	....
Barber Shops	Considerable	15	10	....
Beauty Parlors	Occasional	10	7½	....
Brokers' Board Rooms	Very Heavy	50	20	....
Cocktail Bars	Heavy	40	25	....
Corridors (Supply or Exhaust)	...	...	...	0.25
Department Stores	None	7½	5	0.05
Directors' Rooms	Extreme	50	30	....
Drug Stores[e]	Considerable	10	7½	....
Factories[d, f]	None	10	7½	0.10
Five and Ten Cent Stores	None	7½	5	....
Funeral Parlors	None	10	7½	....
Garages[d]	...	...	...	1.0
Hospitals Operating Rooms[f, g]	None	...	...	2.0
Private Rooms	None	30	25	0.33
Wards	None	20	10	....
Hotel Rooms	Heavy	30	25	0.33
Kitchens Restaurant	...	...	...	4.0
Residence	...	...	...	2.0
Laboratories[e]	Some	20	15	....
Meeting Rooms	Very Heavy	50	30	1.25
Offices General	Some	15	10	....
Private	None	25	15	0.25
Private	Considerable	30	25	0.25
Restaurant Cafeteria[e]	Considerable	12	10	....
Dining Room[e]	Considerable	15	12	....
School Rooms[d]	None	...	...	....
Shop, Retail	None	10	7½	....
Theater[d]	None	7½	5	....
Theater	Some	15	10	....
Toilets[d] (Exhaust)	...	...	...	2.0

[a] Taken from present-day practice or large air conditioning companies. [b] This is contaminant-free air and may be either outdoor air or recirculated air which has been appropriately purified. [c] When minimum is used, take the larger of the two. [d] See local codes which may govern. [e] May be governed by exhaust. [f] May be governed by special sources of contamination or local codes. [g] All outside air recommended to overcome explosion hazard of anesthetics. See *National Board of Fire Underwriters'* pamphlet No. 56.

INSTANTANEOUS HEAT LOAD

The total cooling load is frequently divided for convenience into two components, *sensible heat* and *latent heat*. While this subdivision is not imperative, past practice has found it convenient.

A gain of *sensible heat* is considered to occur when there is a direct addi-