

TABLE 2. SUMMER CLIMATIC CONDITIONS* (CONCLUDED)*
Suggested Design Wet-Bulb and Dry-Bulb Temperatures

COL. 1 STATE	COL. 2 STATION ^b	COL. 3 ELE- VATION ^c Ft	COL. 4 PERIOD OF RECORD ^d	COL. 5 HIGHEST TEMP. EVER RECORDED ^e °F	COL. 6 DESIGN DRY-BULB TEMP. ON T.A.C. 24% BASIS ^f °F	COL. 7 DESIGN DRY-BULB TEMP. IN COMMON USE ^g °F	COL. 8 DESIGN WET-BULB TEMP. IN COMMON USE ^h °F	COL. 9 AVERAGE SUMMER WIND VELOCITY ⁱ MPH
S. C.	Columbia. CO	401	1887-1947	108		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 ^d	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	108		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	1912-1940	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	78	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			
Utah	Wink. AP	2811	1935-1939	110	99			
	Milford. AP	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			
Vt.	Burlington. CO	409	1884-1943 ^d	100		90	73	8.5
	Burlington. AP	335	1943-1947	101				
Va.	Cape Henry. CO	24	1874-1947	104		95	78	
	Lynchburg. CO	644	1874-1944	106		95	75	
	Lynchburg. AP	951	1944-1947	100				
	Norfolk. CO	91	1871-1947	105		95	78	10.1
	Richmond. CO	180	1897-1947	107		95	78	6.4
	Richmond. AP	172	1929-1947	104	92			
	Roanoke. AP	1194	1935-1939	103	90			
Wash.	Ellensburg. AP	1731	1935-1939	105	90			
	North Head. CO	199	1884-1947	97		85	65	
	Seattle. CO	104	1890-1947	100		85	65	7.7
	Seattle. AP	47	1928-1947 ^d	99	81			
	Spokane. CO	2030	1881-1941 ^d	108		93	65	6.5
	Spokane. AP	1974	1941-1947	104	92			
	Tacoma. CO	279	1897-1947	98		85	64	
	Tatooch Island. CO	110	1883-1947	88				
	Yakima. CO	1160	1928-1946	110		95	65	
	Yakima. AP	1066	1944-1947	103				
W. Va.	Parkersburg. CO	685	1888-1947	106		95	75	5.2
Wisc.	Green Bay. CO	598	1886-1947	104		95	75	9.2
	La Crosse. CO	725	1872-1947	108		95	75	6.4
	La Crosse. AP	677	1943-1947	96	91			
	Madison. CO	1008	1858-1947	107		95	75	7.9
	Madison. AP	884	1935-1939	106	89			
	Milwaukee. CO	744	1870-1947	105		95	75	9.8
	Milwaukee. AP	707	1927-1947	106	87			
Wyo.	Cheyenne. CO	6144	1872-1935	100		95	65	9.2
	Cheyenne. AP	6181	1935-1947	100	89			
	Lander. CO	5448	1891-1946	102		95	65	
	Lander. AP	5568	1936-1947	97				
	Rock Springs. AP	6746	1932-1942	98	87			

NOTES FOR TABLE 2

- * 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 2 1/2 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		CFM PER Sq ^b Ft OF FLOOR
		Recommended	Minimum ^c	
Apartment Average.....	Some.....	20	10	
Deluxe.....	Some.....	30	25	0.33
Banking Space.....	Occasional.....	10	7 1/2	
Barber Shops.....	Considerable.....	15	10	
Beauty Parlors.....	Occasional.....	10	7 1/2	
Brokers' Board Rooms.....	Very Heavy.....	50	20	
Cocktail Bars.....	Heavy.....	40	25	
Corridors (Supply or Exhaust).....	None.....	7 1/2	5	0.25
Department Stores.....	Extrem.....	50	30	0.05
Directors' Rooms.....				
Drug Stores ^e	Considerable.....	10	7 1/2	
Factories ^d	None.....	10	7 1/2	0.10
Five and Ten Cent Stores.....	None.....	7 1/2	5	
Funeral Parlors.....	None.....	10	7 1/2	
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	7 1/2	
Theater ^d	None.....	7 1/2	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-