

TABLE 3. SUMMER CLIMATIC CONDITIONS* (CONCLUDED)
Suggested Design Wet-Bulb and Dry-Bulb Temperatures

COL. 1	COL. 2	COL. 3	COL. 4	COL. 5	COL. 6	COL. 7	COL. 8	COL. 9
STATE	STATION ^b	ELEVATION ^c	PERIOD OF RECORD ^d	HIGHEST TEMP. EVER RECORDED ^e	DESIGN DRY-BULB TEMP. ON T.A.C. BASIS ^f	DESIGN DRY-BULB TEMP. IN COMMON USE ^g	DESIGN WET-BULB TEMP. IN COMMON USE ^h	AVERAGE SUMMER WIND VELOCITY ⁱ
		FT		°F	°F	°F	°F	MPH
S. C.	Columbia.....CO	401	1887-1947	106	.....	95	75	.....
S. D.	Columbia.....AP	227	1939-1947 ^h	104	.....	95	75	10.3
	Huron.....CO	1343	1881-1938 ^h	111	.....	95	75	.....
	Rapid City.....CO	3209	1938-1947	106	.....	95	70	7.9
Tenn.	Rapid City.....AP	3220	1939-1947	108	.....	95	76	5.6
	Chattanooga.....CO	952	1879-1947	103	.....	95	76	5.7
	Chattanooga.....AP	675	1940-1947	105	94	95	75	5.7
	Knoxville.....CO	1024	1871-1942 ^h	104	94	95	75	7.3
	Knoxville.....AP	1007	1942-1947	102	94	95	75	7.3
	Memphis.....CO	348	1872-1941 ^d	106	96	95	78	.....
	Memphis.....AP	267	1941-1947	103	96	95	78	.....
	Nashville.....CO	714	1871-1947	106	.....	95	78	.....
Texas	Nashville.....AP	810	1939-1947	104	.....	100	74	.....
	Arlene.....CO	1748	1885-1944 ^h	111	97	100	74	.....
	Amarillo.....CO	3686	1892-1941	107	100	72	11.3	.....
	Amarillo.....AP	3595	1941-1947	106	96	100	78	.....
	Austin.....CO	625	1897-1942	109	.....	100	78	.....
	Austin.....AP	625	1942-1947	104	.....	100	78	.....
	Brownsville.....CO	140	1922-1946 ^h	102	.....	100	80	7.0
	Brownsville.....AP	25	1943-1947	100	.....	100	80	.....
	Corpus Christi.....CO	31	1887-1942	105	95	80	.....	.....
	Corpus Christi.....AP	45	1943-1946	101	.....	100	78	9.8
	Dallas.....CO	732	1913-1940	110	99	100	78	9.8
	Dallas.....AP	520	1940-1947	109	99	100	78	.....
	Del Rio.....CO	1020	1905-1947	111	100	69	8.4	.....
	El Paso.....CO	3792	1887-1942	106	100	69	8.4	.....
	El Paso.....AP	3656	1939-1947	104	97	100	78	9.5
	Fort Worth.....CO	708	1898-1939	112	100	78	9.5	.....
	Fort Worth.....AP	728	1940-1947	110	.....	95	80	9.7
	Galveston.....CO	128	1871-1947	101	.....	95	80	9.7
	Galveston.....AP	9	1939-1947	101	.....	95	78	8.8
	Houston.....CO	193	1883-1947	108	95	78	8.8	.....
	Houston.....AP	78	1932-1947	105	93	95	79	.....
	Palestine.....CO	555	1881-1947	103	100	78	.....	.....
	Port Arthur.....CO	94	1917-1947	102	.....	95	79	.....
	Port Arthur.....AP	81	1944-1947	98	.....	100	78	7.8
	San Antonio.....CO	770	1883-1941 ^d	107	.....	100	78	7.8
	San Antonio.....AP	800	1942-1947	104	98	.....	.....	.....
	Waco.....AP	813	1931-1947	111	98	.....	.....	.....
Utah	Wink.....AP	2811	1935-1939	110	99	.....	.....	.....
	Millard.....AP	5095	1935-1939	103	94	.....	.....	.....
	Modena.....CO	1472	1901-1947	101	.....	95	65	9.8
	Salt Lake City.....CO	4348	1874-1947	105	.....	95	65	9.8
	Salt Lake City.....AP	4254	1928-1947	106	95	90	73	8.5
Va.	Burlington.....CO	409	1884-1943 ^h	100	.....	95	78	.....
	Burlington.....AP	335	1943-1947	101	.....	95	78	.....
	Cape Henry.....CO	24	1874-1947	104	.....	95	78	.....
	Lynchburg.....CO	644	1874-1944	103	.....	95	78	.....
	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	.....	95	78	6.4
	Richmond.....AP	172	1929-1947	104	92	95	76	.....
	Roanoke.....AP	1194	1935-1939	103	90	.....	.....	.....
Wash.	Ellensburg.....AP	1791	1935-1939	105	90	.....	.....	.....
	North Bend.....CO	199	1884-1947	97	85	65	.....	.....
	Seattle.....CO	104	1890-1947	100	85	65	7.7	.....
	Seattle.....AP	47	1928-1947	99	81	65	6.5	.....
	Spokane.....CO	2630	1881-1941 ^h	108	93	65	6.5	.....
	Spokane.....AP	1974	1941-1947	104	93	65	6.4	.....
	Tacoma.....CO	279	1897-1947	98	85	65	.....	.....
	Tatooch Island.....CO	110	1883-1947	88	.....	95	65	.....
	Yakima.....CO	1180	1928-1945	110	.....	95	65	.....
W. Va.	Yakima.....AP	1066	1944-1947	103	.....	95	75	5.2
Wis.	Parkburg.....CO	685	1885-1947	108	.....	95	75	9.2
	Green Bay.....CO	898	1886-1947	104	.....	95	75	6.4
	La Crosse.....CO	725	1872-1947	108	.....	95	75	.....
	La Crosse.....AP	677	1943-1947	96	91	95	75	7.9
	Madison.....CO	1008	1858-1947	107	89	95	75	9.8
	Madison.....AP	884	1935-1939	108	89	95	75	9.8
	Milwaukee.....CO	744	1879-1947	105	87	95	75	9.8
	Milwaukee.....AP	707	1927-1947	106	87	95	75	9.8
	Cheyenne.....CO	6144	1873-1935	100	89	95	65	9.9
	Cheyenne.....AP	6161	1935-1947	100	89	95	65	.....
	Lander.....CO	5448	1891-1946	102	.....	95	65	.....
	Lander.....AP	5568	1938-1947	97	87	.....	.....	.....
	Rock Springs.....AP	6746	1933-1943	98	87	.....	.....	.....

Cooling Load

NOTES FOR TABLE 3

- * 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 per cent 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 per cent of the hours for period 1935-1939.
- ⁱ Blank spaces indicate data not available.

TABLE 4. VENTILATION STANDARDS*

APPLICATION	SMOKING	CFM PER PERSON		CFM PER SQ FT OF FLOOR
		Recommended	Minimum ^b	
Apartment Average.....	Some.....	20	10	.....
Banking Space.....	Some.....	30	25	0.33
Barber Shops.....	Occasional.....	10	7 1/2	.....
Beauty Parlors.....	Considerable.....	15	10	.....
Brokers' Board Rooms.....	Occasional.....	10	7 1/2	.....
Cocktail Bars.....	Very Heavy.....	50	20	.....
Corridors (Supply or Exhaust).....	Heavy.....	40	25	0.25
Department Stores.....	None.....	7 1/2	5	0.05
Directors' Rooms.....	Extreme.....	50	30	.....
Drug Stores ^c	Considerable.....	10	7 1/2	.....
Factories ^c	None.....	7 1/2	7 1/2	0.10
Five and Ten Cent Stores.....	None.....	7 1/2	5	.....
Funeral Parlors.....	None.....	10	7 1/2	1.0
Garages ^c.....	.....	.....	.....	.....
Hospitals Operating Rooms ^c	None.....	30	25	2.0
Private Rooms.....	None.....	20	10	0.33
Wards.....	None.....	30	25	0.33
Hotel Rooms.....	Heavy.....	30	25	4.0
Kitchens Restaurant.....	.....	.....	.....	2.0
Residence.....	.....	.....	.....	.....
Laboratories ^c	Some.....	20	15	.....
Meeting Rooms.....	Very Heavy.....	50	30	1.25
Offices General.....	Some.....	15	15	0.25
Private.....	None.....	25	25	0.25
Restaurant Cafeteria ^c	Considerable.....	30	10	.....
Dining Room ^c	Considerable.....	15	12	.....
School Rooms.....	None.....	10	7 1/2	.....
Shop, Retail.....	None.....	7 1/2	5	.....
Theater ^c	None.....	15	10	.....
Toilets (Exhaust).....	Some.....	.....	.....	2.0

* Taken from present-day practice or large air conditioning companies. ^b When minimum is used, take the larger of the two. ^c See local codes which may govern. ^d May be governed by exhaust. ^e May be governed by special sources of contamination or local codes. ^f All outside air recommended to overcome explosion hazard of anesthetics.

applications are summarized in Table 4. For further general applications, a basis of estimating the cfm per person may be taken as:

1. People not smoking..... 7 1/2 Recommended 5 Minimum
2. People smoking..... 40 Recommended 25 Minimum

The cooling load due to the introduction of outside air for ventilation is