

TABLE 1. AVERAGE MAXIMUM DESIGN DRY-BULB TEMPERATURES, DESIGN WET-BULB TEMPERATURES, WIND VELOCITIES, AND WIND DIRECTIONS FOR JUNE, JULY, AUGUST, AND SEPTEMBER

STATE	CITY	AVERAGE MAXIMUM DESIGN DRY-BULB	DESIGN WET-BULB	SUMMER WIND VELOCITY MPH	PREVAILING SUMMER WIND DIRECTION
Ala.	Birmingham	93	77	5.2	S
	Mobile	94	78	8.6	SW
Ariz.	Phoenix	110	77	6.0	W
Ark.	Little Rock	95	77	7.0	NE
Calif.	Los Angeles	88	70	6.0	SW
	San Francisco	85	68	11.0	SW
Colo.	Denver	90	64	6.8	S
Conn.	New Haven	88	74	7.3	S
D. C.	Washington	95	78	6.2	S
Fla.	Jacksonville	94	78	8.7	SW
	Tampa	94	79	7.0	E
Ga.	Atlanta	91	75	7.3	NW
	Savannah	95	79	7.8	SW
Idaho	Boise	95	65	5.8	NW
Ill.	Chicago	95	75	10.2	NE
	Peoria	91	75	8.2	S
Ind.	Indianapolis	90	73	9.0	SW
Iowa	Des Moines	92	74	6.6	SW
Ky.	Louisville	94	75	8.0	SW
La.	New Orleans	94	79	7.0	SW
Maine	Portland	85	71	7.3	S
Md.	Baltimore	93	76	6.9	SW
Mass.	Boston	88	73	9.2	SW
Mich.	Detroit	93	73	10.3	SW
Minn.	Minneapolis	84	72	8.4	SE
Miss.	Vicksburg	95	78	6.2	SW
Mo.	Kansas City	92	75	9.5	S
	St. Louis	95	78	9.4	SW
Mont.	Helena	87	63	7.3	SW
Nebr.	Lincoln	93	74	9.3	S
Nev.	Reno	93	64	7.4	W
N. J.	Trenton	95	76	10.0	SW
N. Y.	Albany	90	74	7.1	S
	Buffalo	83	72	12.2	SW
	New York	95	75	12.9	SW
N. M.	Santa Fe	87	63	6.5	SE
N. C.	Asheville	87	72	5.8	SE
	Wilmington	93	79	7.8	SW
N. Dak.	Bismarck	88	69	8.8	NW
Ohio	Cleveland	95	73	9.9	S
	Cincinnati	95	78	6.6	SW
Okla.	Oklahoma City	96	76	10.1	S
Oreg.	Portland	83	65	6.6	NW
Pa.	Philadelphia	95	78	9.7	SW
	Pittsburgh	91	73	9.0	NW
R. I.	Providence	85	73	10.0	NW
S. C.	Charleston	94	80	9.9	SW
	Greenville	93	76	6.8	NE
Tenn.	Chattanooga	94	76	6.5	SW
	Memphis	93	77	7.5	SW

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STATE	CITY	AVERAGE MAXIMUM DESIGN DRY-BULB	DESIGN WET-BULB	SUMMER WIND VELOCITY MPH	PREVAILING SUMMER WIND DIRECTION
Texas	Dallas	99	76	9.4	S
	Galveston	93	79	9.7	S
	San Antonio	100	78	7.4	SE
	Houston	93	79	7.7	S
	El Paso	98	69	6.9	E
Utah	Salt Lake City	95	67	8.2	SE
	Burlington	85	71	8.9	S
Vt.	Norfolk	91	76	10.9	S
Va.	Richmond	95	78	6.2	SW
Wash.	Seattle	83	61	7.9	S
	Spokane	89	63	6.5	SW
W. Va.	Parkersburg	90	74	5.3	SE
Wis.	Madison	89	73	8.1	SW
Wyo.	Milwaukee	93	74	10.4	S
	Cheyenne	85	62	9.2	S

COOLING LOAD

The cooling load may be divided into the following parts:

1. Transmission of heat through walls, roof, and glass with allowances for sun-exposed surfaces and heat capacity.
2. Transmission of solar radiation through glass and absorption by interior furnishings.
3. Heat and moisture from infiltration and from outside air introduced.
4. Heat and moisture from occupants and heat from lights, machinery and other sources.

Transmission for Surfaces Not Exposed to the Sun

The transmission load for surfaces not exposed to the sun is calculated in a manner similar to that described in Chapter 7, by means of the following formula:

$$H_t = AU(t_o - t) \quad (1)$$

where

H_t = heat transmitted through the material of the wall, glass, roof, or floor, Btu per hour.

A = net inside area of wall, glass, roof, or floor, square feet.

t = inside temperature, degrees Fahrenheit.

t_o = outside temperature, degrees Fahrenheit.

U = coefficient of transmission of wall, floor, roof, or glass, Btu per hour per square foot per degree Fahrenheit difference in temperature. (Tables 3 to 13; Chapter 5.)

Outside Temperatures

Summer dry-bulb and wet-bulb temperatures for various cities are given in Table 1. It will be noted that the temperatures are not the maximums but the design temperatures which should be used in air-conditioning calculations. The maximum outside wet-bulb temperatures