WOOD PRODUCTS NOTES

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Summary: Wood responds to atmospheric moisture in a predictable manner. If the relative humidity and temperature of the air are known, we can determine the equilibrium moisture content of that air, or EMC. Knowledge of the EMC is useful in estimating how fast lumber on an air drying yard will dry; how long it will take for kiln dried lumber to pick up moisture when stored in a warehouse; and the performance of finished wood products in exterior service. The National Oceanic and Atmospheric Administration publishes 30-year Climate Normals for locations in the United States. Climate Normals for 1981-2010 were used to determine the average monthly exterior EMC values for 252 locations in the US.

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The Equilibrium Moisture Content of Wood in Exterior Locations in the United States: An Update

By Phil Mitchell
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INTRODUCTION

Wood is a hygroscopic material, releasing or adsorbing moisture from the surrounding environment. In an environment maintained at a constant relative humidity and temperature, the wood will come to a moisture content that is in equilibrium with the moisture in the air. The temperature and relative humidity of the air describe an equilibrium moisture content (EMC) condition, and the moisture content of wood in that environment will approach the EMC of the air. Although the relationship between relative humidity and moisture content is not linear, an increase in relative humidity or a decrease in temperature will increase the EMC of the air.

Simpson (1973) employed the adsorption model developed by Hailwood and Horrobin (1946) to predict the EMC based on the combination of temperature and relative humidity. The form of the equation is:

$$EMC = \frac{1800}{W}\left(\frac{Kh}{1-Kh} + \frac{(K_1Kh + 2K_1K_2K^2h^2)}{(1 + K_1Kh + K_1K_2K^2h^2)}\right)$$

where EMC is the equilibrium moisture content (%), h is relative humidity (% / 100), and W, K, K_1 and K_2 are coefficients. These coefficients are defined by the following equations where T is temperature in degrees Fahrenheit:

$$W = 330 + 0.452T + 0.00415T^2$$
$$K = 0.791 + 0.000463T - 0.000000844T^2$$
$$K_1 = 6.34 + 0.000775T - 0.0000935T^2$$
$$K_2 = 1.09 + 0.0284T - 0.0000904T^2$$

Knowing the EMC of a geographic location can provide an indication of: how fast lumber might dry if stacked on an air drying yard; the likelihood that kiln-dried lumber stored in uncontrolled warehouse conditions might regain moisture; and the performance of finished wood products that are not sufficiently protected from the outside environment.

In 1998, the US Forest Products Lab published the average monthly equilibrium moisture content (EMC) values for 262 locations in the United States, Puerto Rico, and the Pacific Island territories (Simpson, 1998). In that publication the above equations were used with the 30-year (1961 – 1990) Climate Normals from the National Climatic Data Center to calculate the monthly outdoor EMC of wood in the contiguous United States.

Updating the Equilibrium Moisture Contents in the United States

The current paper presents new EMC data calculated in the same manner but using more recent Climate Normals for the period 1981 – 2010 (NCDC). The average EMC for each month is presented in Table 1 for 252 locations in the United States, eight locations in the Pacific Island territories, and one for Puerto Rico. The reported Climate Normals used include the monthly averages of the daily morning and afternoon relative humidities which were averaged to give a single monthly relative humidity for the purpose of the EMC calculations. The temperature values are the monthly averages of the normal daily temperatures.

Not surprisingly, those locations in the dry climate of the US Southwest such as found in Nevada, New Mexico, Colorado, Arizona, and parts of California and Texas exhibit the lowest EMCs. For example, Las Vegas, Nevada has the lowest annual average EMC of 5.9%, with monthly EMCs that range from 3.7% to 8.3%. Coastal or near coastal locations, especially in the US Northwest and Alaska but also the Gulf coast, and the represented islands, exhibit the other extreme of having the highest EMCs. St. Paul Island in Alaska has the highest annual average EMC of 19.1%. In the lower 48 states the highest annual average EMC of 17.3% is found in Quillayute, Washington on the Olympic Peninsula.

The range of monthly EMCs throughout the year (the highest monthly EMC minus the lowest monthly EMC for a location) varies among different locations and provides an indication of the possible variation in the moisture content of wood products throughout the year. Locations east of the Cascades such as eastern Washington, eastern Oregon, and Idaho exhibit some of the largest variability in EMC during the year, the highest being Spokane, Washington with a range of monthly EMC of 10.3% between August (8.2% EMC) and December (18.5% EMC). Locations having small variability in EMC throughout the year typically include areas that have the reputation for high humidity, such as coastal areas and the deep South. The lowest range of monthly EMC during the year is 0.8% that occurs in Houston, Texas (13.8 in October and 14.6 in December). For much of the country, however, the range of monthly EMCs throughout the year for 125 of the 261 locations (48% of the locations) listed in Table 1 is between 2% and 4%.

December was the month having the highest EMC for 125 locations found mostly in the Midwest, western and northern states. September was the highest EMC month for 44 locations mostly in the South. April and May were the months with the lowest EMC for 151 of the 261 locations (58% of the locations).

Download the Excel Spreadsheet of EMC in the United States

You can download the Excel Spreadsheet that lets the user select up to six cities or locations at a time using drop down boxes. The EMC's for the selected locations are shown in table form for each month, and also shown graphically for each location. You can download the Excel Spreadsheet at https://research.cnr.ncsu.edu/blogs/wpe/files/2016/08/EMCs-in-the-United-States-LocationsV1.xlsx

Literature Cited

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Table 1. Equilibrium moisture content (EMC) of wood exposed to outdoor conditions in the United States, estimated by mean monthly temperature and relative humidity.

State	City	EMC (%)											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
AL	BIRMINGHAM	13.6	13.0	12.4	12.4	13.0	13.0	13.5	13.3	13.4	13.2	13.1	13.6
AL	HUNTSVILLE	14.3	13.6	12.8	12.4	13.0	13.2	13.9	13.7	13.6	13.2	13.5	14.1
AL	MOBILE	13.8	13.6	13.2	13.3	13.2	13.5	14.3	14.3	14.1	13.1	13.4	14.0
AL	MONTGOMERY	13.7	13.3	12.7	13.0	13.2	13.3	13.8	13.8	13.6	13.4	13.3	13.8
AK	ANCHORAGE	14.7	14.0	12.2	11.5	10.7	11.8	13.1	13.8	14.2	14.2	15.0	15.6
AK	ANNETTE	16.3	15.5	14.6	13.9	13.8	14.3	15.2	15.9	16.7	17.2	17.1	17.1
AK	BARROW	13.4	12.8	13.0	15.3	18.9	19.4	19.2	20.5	20.5	18.7	16.1	13.9
AK	BETHEL	15.8	15.2	15.8	15.9	13.9	13.8	15.8	17.5	17.0	17.7	17.4	16.2
AK	BETTLES	12.9	12.6	11.9	11.8	10.6	10.3	11.8	13.7	14.2	15.5	14.3	13.7
AK	BIG DELTA	12.5	12.3	11.2	9.9	8.8	10.0	11.0	11.8	12.4	14.8	14.0	13.5
AK	COLD BAY	18.3	18.1	17.1	17.1	16.7	17.6	19.1	19.5	17.8	16.7	17.5	18.1
AK	FAIRBANKS	13.5	13.0	11.5	10.2	8.7	9.8	11.3	12.6	13.0	14.8	14.7	14.1
AK	GULKANA	14.1	13.8	11.7	10.6	9.5	9.9	11.3	12.0	12.7	14.9	15.8	15.1
AK	HOMER	15.8	15.1	13.8	13.4	13.1	13.7	15.0	15.7	15.4	15.0	15.4	15.9
AK	JUNEAU	17.3	16.7	14.9	13.9	13.4	14.0	15.6	16.5	18.4	18.5	18.1	18.5
AK	KING SALMON	15.9	15.0	14.2	13.7	12.5	13.3	14.7	15.6	15.6	15.7	16.5	16.1
AK	KODIAK	15.7	15.5	14.3	14.1	14.7	15.9	16.3	15.6	15.6	14.6	14.9	15.4
AK	KOTZEBUE	14.1	14.5	14.0	15.7	16.9	17.0	16.3	16.7	16.0	16.5	15.7	14.9
AK	MCGRATH	14.0	13.3	11.9	11.2	10.3	10.9	12.6	14.3	14.4	15.7	15.4	14.8
AK	NOME	14.6	14.4	13.9	15.3	14.9	15.1	16.7	17.1	15.3	15.2	15.3	14.7
AK	ST. PAUL ISLAND	17.9	18.7	18.1	18.3	19.4	20.4	22.5	22.5	19.6	16.9	16.9	17.7
AK	TALKEETNA	13.4	13.0	11.8	11.2	10.7	11.7	13.4	14.8	15.0	14.9	14.4	14.4
AK	VALDEZ	14.3	14.3	13.3	12.9	13.2	14.0	15.8	16.2	16.6	14.9	14.5	14.9
AK	YAKUTAT	18.3	17.3	15.4	15.0	14.7	15.5	17.3	17.7	18.2	18.0	18.1	19.2
AZ	FLAGSTAFF	11.5	11.0	10.2	9.0	8.2	7.0	9.6	11.0	10.1	9.7	10.5	11.5
AZ	PHOENIX	8.9	8.3	7.4	6.0	4.9	4.4	6.2	6.8	6.5	6.9	7.8	9.0
AZ	TUCSON	8.6	7.8	7.0	5.6	4.7	4.5	7.6	8.4	7.5	7.0	7.6	8.8
AZ	WINSLOW	10.8	9.2	7.7	6.6	5.7	5.0	7.4	8.2	7.8	7.8	8.9	10.8
AR	FORT SMITH	13.8	13.4	12.5	12.4	13.7	13.5	13.2	13.1	13.4	13.2	13.2	13.9
AR	LITTLE ROCK	13.8	13.2	12.8	12.9	13.7	13.0	13.2	13.0	13.2	13.1	13.3	13.8
CA	BAKERSFIELD	13.6	11.9	10.4	9.1	7.8	7.0	6.5	7.0	7.6	8.7	11.5	13.3
CA	BISHOP	8.5	8.2	6.6	5.8	5.6	5.1	5.1	5.1	5.3	6.1	7.5	8.7
CA	BLUE CANYON	10.9	12.0	12.0	11.0	9.5	8.1	7.0	6.9	7.6	9.4	10.9	11.4
CA	FRESNO	15.8	13.8	11.9	10.3	8.8	7.9	7.4	7.8	8.5	9.8	12.9	15.8
CA	LONG BEACH	11.9	12.3	12.4	12.1	12.4	12.8	12.3	12.3	12.5	12.2	11.9	11.9
CA	LOS ANGELES	9.4	10.2	10.5	10.4	11.0	11.7	11.6	11.2	10.8	10.6	9.8	9.9
CA	REDDING	13.0	11.8	10.8	9.7	8.6	7.3	6.6	6.6	7.0	8.6	11.8	13.1
CA	SACRAMENTO	15.9	13.9	12.7	11.4	10.4	9.6	9.2	9.5	9.5	10.5	13.4	15.8
CA	SAN DIEGO	12.0	12.3	12.6	12.6	13.3	14.1	14.0	14.1	13.8	13.0	12.2	12.0
CA	SAN FRANCISCO	15.2	15.8	15.8	15.3	16.3	14.6	16.6	16.4	14.4	14.9	14.7	16.5
CA	SANTA BARBARA	12.2	12.7	12.9	13.0	13.3	14.3	14.7	14.5	14.1	13.5	12.4	12.8
CA	SANTA MARIA	12.9	13.6	13.6	13.2	13.4	13.9	13.9	14.3	13.9	12.9	12.6	12.7
CA	STOCKTON	15.8	13.9	12.1	10.7	9.3	8.7	8.4	8.5	9.0	10.0	13.4	15.9
CO	ALAMOSA	12.6	11.6	9.9	9.0	9.0	8.8	10.4	10.9	10.1	10.0	11.2	12.5
CO	COLORADO SPRINGS	9.5	9.4	9.2	9.1	9.5	9.0	9.5	9.9	9.3	9.0	9.6	9.8
CO	DENVER	10.1	10.0	8.8	9.1	9.2	8.3	8.0	8.4	8.4	9.1	9.6	10.5
CO	GRAND JUNCTION	13.4	11.3	9.1	7.9	7.1	5.9	6.5	7.2	7.4	8.6	10.8	13.1
CO	PUEBLO	10.8	10.0	9.2	8.7	9.0	8.6	8.9	9.5	9.0	9.2	10.5	10.9

Table 1. Equilibrium moisture content (EMC) of wood exposed to outdoor conditions in the United States, estimated by mean monthly temperature and relative humidity.

		EMC (%)											
State	City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CT	BRIDGEPORT	12.7	12.4	12.0	11.9	12.6	12.8	12.6	13.0	13.2	13.0	12.9	12.9
CT	HARTFORD	12.4	12.1	11.6	10.7	11.2	11.9	11.8	12.5	13.2	12.9	12.9	13.1
DE	WILMINGTON	12.8	12.4	11.8	11.4	12.1	12.0	12.1	12.7	13.1	13.2	13.0	13.1
DC	WASHINGTON DULLES	12.7	12.3	11.9	11.5	12.5	12.5	12.5	12.9	13.4	13.4	12.8	12.9
DC	WASHINGTON NAT'L	11.9	11.5	11.2	11.0	11.6	11.7	11.7	12.1	12.6	12.6	12.2	12.1
FL	DAYTONA BEACH	14.0	13.5	13.2	12.8	13.0	14.0	14.4	15.0	14.9	14.0	14.1	14.2
FL	FORT MYERS	13.7	13.3	12.7	12.2	12.2	13.4	13.9	14.2	14.5	13.7	13.7	13.8
FL	GAINESVILLE	13.9	13.6	13.1	12.6	12.5	13.8	14.6	14.9	15.0	14.1	14.3	14.4
FL	JACKSONVILLE	13.9	13.5	12.9	12.6	12.7	13.6	13.8	14.4	15.0	14.4	14.2	14.3
FL	KEY WEST	14.6	14.2	13.7	13.0	13.0	13.4	13.1	13.2	14.1	14.2	14.4	14.8
FL	MIAMI	13.5	13.1	12.7	12.2	12.5	13.7	13.4	13.8	14.4	13.8	13.6	13.5
FL	ORLANDO	13.5	13.2	12.8	12.2	12.4	13.6	14.0	14.4	14.4	13.7	13.8	13.9
FL	PENSACOLA	13.9	13.6	13.5	13.5	13.5	13.6	14.4	14.7	14.1	13.1	13.4	14.0
FL	TALLAHASSEE	13.7	13.2	12.9	12.6	12.5	13.4	14.4	14.4	14.1	13.2	13.4	13.8
FL	TAMPA	13.8	13.6	13.0	12.5	12.3	13.4	13.9	14.4	14.4	13.5	13.6	14.0
FL	VERO BEACH	14.2	13.8	13.0	12.7	13.0	14.0	14.4	14.7	14.9	14.0	14.0	14.2
FL	WEST PALM BEACH	13.6	13.3	12.7	12.2	12.7	13.9	13.7	13.9	14.4	13.5	13.4	13.5
GA	ATHENS	13.0	12.5	12.3	12.1	12.9	13.0	13.5	13.9	14.1	13.6	13.0	13.4
GA	ATLANTA	13.3	12.5	12.2	11.8	12.3	12.7	13.4	13.5	13.5	12.9	12.8	13.2
GA	AUGUSTA	13.0	12.6	12.3	12.2	12.3	12.5	12.9	13.7	13.8	13.2	13.0	13.2
GA	COLUMBUS	13.5	12.9	12.5	12.2	12.2	12.4	13.3	13.3	13.3	12.9	13.1	13.6
GA	MACON	13.2	12.9	12.6	12.3	12.2	12.7	13.2	13.6	13.7	13.2	13.0	13.5
GA	SAVANNAH	13.1	12.8	12.4	12.2	12.4	13.0	13.6	14.1	14.2	13.4	13.2	13.3
HI	HILO	13.7	13.7	14.0	14.4	14.0	13.9	14.3	14.4	14.1	14.3	14.9	14.5
HI	HONOLULU	13.1	12.7	12.3	11.7	11.3	11.1	11.1	11.0	11.4	12.0	12.5	13.0
HI	KAHULUI	13.4	13.1	13.2	12.4	12.0	11.6	11.9	11.9	11.9	12.3	13.1	13.4
HI	LIHUE	14.0	13.8	13.8	13.6	13.3	13.2	13.1	13.1	13.2	13.7	14.1	14.2
ID	BOISE	14.8	12.9	10.6	9.6	9.2	8.4	6.9	6.9	7.9	9.5	12.7	14.8
ID	LEWISTON	15.1	13.4	11.6	10.6	10.3	9.6	7.6	7.6	8.8	11.7	14.7	15.5
ID	POCATELLO	15.2	14.1	11.8	9.9	9.6	9.1	7.8	7.6	8.5	10.0	13.2	15.4
IL	CHICAGO	14.3	14.1	13.4	12.4	12.3	12.3	12.7	13.3	13.3	13.2	13.9	15.1
IL	MOLINE	14.2	14.1	13.3	12.5	12.4	12.7	13.2	14.0	13.4	12.9	13.7	14.8
IL	PEORIA	14.9	14.6	13.6	12.6	12.8	12.9	13.5	14.2	13.5	13.4	14.3	15.5
IL	ROCKFORD	15.0	14.6	13.9	12.7	12.5	12.7	13.3	14.1	13.9	13.5	14.6	15.7
IL	SPRINGFIELD	14.8	14.6	13.8	12.7	12.6	12.8	13.5	14.0	13.3	12.9	13.9	15.2
IN	EVANSVILLE	14.3	13.9	13.2	12.5	12.9	12.8	13.2	13.4	13.5	13.1	13.6	14.8
IN	FORT WAYNE	15.5	15.1	14.1	12.6	12.2	12.3	12.7	13.6	13.5	13.5	14.7	16.2
IN	INDIANAPOLIS	15.1	14.5	13.4	12.5	12.6	12.6	13.1	13.6	13.4	13.4	14.4	15.5
IN	SOUTH BEND	15.7	15.1	13.7	12.5	12.2	12.2	12.7	13.6	13.5	13.7	14.6	16.0
IA	DES MOINES	14.3	14.2	13.4	12.6	12.5	12.9	13.2	13.6	13.4	12.8	13.8	14.9
IA	DUBUQUE	14.9	14.6	13.9	12.7	12.9	13.4	13.8	14.6	14.3	13.6	14.5	15.8
IA	SIOUX CITY	14.5	14.5	13.9	12.4	12.5	13.0	13.6	14.4	13.6	12.8	13.9	15.0
IA	WATERLOO	14.9	14.9	14.5	13.1	12.9	13.1	13.9	14.5	14.0	13.4	14.6	15.8

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		EMC (%)											
State	City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
CT	BRIDGEPORT	12.7	12.4	12.0	11.9	12.6	12.8	12.6	13.0	13.2	13.0	12.9	12.9
CT	HARTFORD	12.4	12.1	11.6	10.7	11.2	11.9	11.8	12.5	13.2	12.9	12.9	13.1
DE	WILMINGTON	12.8	12.4	11.8	11.4	12.1	12.0	12.1	12.7	13.1	13.2	13.0	13.1
DC	WASHINGTON DULLES	12.7	12.3	11.9	11.5	12.5	12.5	12.5	12.9	13.4	13.4	12.8	12.9
DC	WASHINGTON NAT'L	11.9	11.5	11.2	11.0	11.6	11.7	11.7	12.1	12.6	12.6	12.2	12.1
FL	DAYTONA BEACH	14.0	13.5	13.2	12.8	13.0	14.0	14.4	15.0	14.9	14.0	14.1	14.2
FL	FORT MYERS	13.7	13.3	12.7	12.2	12.2	13.4	13.9	14.2	14.5	13.7	13.7	13.8
FL	GAINESVILLE	13.9	13.6	13.1	12.6	12.5	13.8	14.6	14.9	15.0	14.1	14.3	14.4
FL	JACKSONVILLE	13.9	13.5	12.9	12.6	12.7	13.6	13.8	14.4	15.0	14.4	14.2	14.3
FL	KEY WEST	14.6	14.2	13.7	13.0	13.0	13.4	13.1	13.2	14.1	14.2	14.4	14.8
FL	MIAMI	13.5	13.1	12.7	12.2	12.5	13.7	13.4	13.8	14.4	13.8	13.6	13.5
FL	ORLANDO	13.5	13.2	12.8	12.2	12.4	13.6	14.0	14.4	14.4	13.7	13.8	13.9
FL	PENSACOLA	13.9	13.6	13.5	13.5	13.5	13.6	14.4	14.7	14.1	13.1	13.4	14.0
FL	TALLAHASSEE	13.7	13.2	12.9	12.6	12.5	13.4	14.4	14.4	14.1	13.2	13.4	13.8
FL	TAMPA	13.8	13.6	13.0	12.5	12.3	13.4	13.9	14.4	14.4	13.5	13.6	14.0
FL	VERO BEACH	14.2	13.8	13.0	12.7	13.0	14.0	14.4	14.7	14.9	14.0	14.0	14.2
FL	WEST PALM BEACH	13.6	13.3	12.7	12.2	12.7	13.9	13.7	13.9	14.4	13.5	13.4	13.5
GA	ATHENS	13.0	12.5	12.3	12.1	12.9	13.0	13.5	13.9	14.1	13.6	13.0	13.4
GA	ATLANTA	13.3	12.5	12.2	11.8	12.3	12.7	13.4	13.5	13.5	12.9	12.8	13.2
GA	AUGUSTA	13.0	12.6	12.3	12.2	12.3	12.5	12.9	13.7	13.8	13.2	13.0	13.2
GA	COLUMBUS	13.5	12.9	12.5	12.2	12.2	12.4	13.3	13.3	13.3	12.9	13.1	13.6
GA	MACON	13.2	12.9	12.6	12.3	12.2	12.7	13.2	13.6	13.7	13.2	13.0	13.5
GA	SAVANNAH	13.1	12.8	12.4	12.2	12.4	13.0	13.6	14.1	14.2	13.4	13.2	13.3
HI	HILO	13.7	13.7	14.0	14.4	14.0	13.9	14.3	14.4	14.1	14.3	14.9	14.5
HI	HONOLULU	13.1	12.7	12.3	11.7	11.3	11.1	11.1	11.0	11.4	12.0	12.5	13.0
HI	KAHULUI	13.4	13.1	13.2	12.4	12.0	11.6	11.9	11.9	11.9	12.3	13.1	13.4
HI	LIHUE	14.0	13.8	13.8	13.6	13.3	13.2	13.1	13.1	13.2	13.7	14.1	14.2
ID	BOISE	14.8	12.9	10.6	9.6	9.2	8.4	6.9	6.9	7.9	9.5	12.7	14.8
ID	LEWISTON	15.1	13.4	11.6	10.6	10.3	9.6	7.6	7.6	8.8	11.7	14.7	15.5
ID	POCATELLO	15.2	14.1	11.8	9.9	9.6	9.1	7.8	7.6	8.5	10.0	13.2	15.4
IL	CHICAGO	14.3	14.1	13.4	12.4	12.3	12.3	12.7	13.3	13.3	13.2	13.9	15.1
IL	MOLINE	14.2	14.1	13.3	12.5	12.4	12.7	13.2	14.0	13.4	12.9	13.7	14.8
IL	PEORIA	14.9	14.6	13.6	12.6	12.8	12.9	13.5	14.2	13.5	13.4	14.3	15.5
IL	ROCKFORD	15.0	14.6	13.9	12.7	12.5	12.7	13.3	14.1	13.9	13.5	14.6	15.7
IL	SPRINGFIELD	14.8	14.6	13.8	12.7	12.6	12.8	13.5	14.0	13.3	12.9	13.9	15.2
IN	EVANSVILLE	14.3	13.9	13.2	12.5	12.9	12.8	13.2	13.4	13.5	13.1	13.6	14.8
IN	FORT WAYNE	15.5	15.1	14.1	12.6	12.2	12.3	12.7	13.6	13.5	13.5	14.7	16.2
IN	INDIANAPOLIS	15.1	14.5	13.4	12.5	12.6	12.6	13.1	13.6	13.4	13.4	14.4	15.5
IN	SOUTH BEND	15.7	15.1	13.7	12.5	12.2	12.2	12.7	13.6	13.5	13.7	14.6	16.0
IA	DES MOINES	14.3	14.2	13.4	12.6	12.5	12.9	13.2	13.6	13.4	12.8	13.8	14.9
IA	DUBUQUE	14.9	14.6	13.9	12.7	12.9	13.4	13.8	14.6	14.3	13.6	14.5	15.8
IA	SIOUX CITY	14.5	14.5	13.9	12.4	12.5	13.0	13.6	14.4	13.6	12.8	13.9	15.0
IA	WATERLOO	14.9	14.9	14.5	13.1	12.9	13.1	13.9	14.5	14.0	13.4	14.6	15.8

Table 1. Equilibrium moisture content (EMC) of wood exposed to outdoor conditions in the United States, estimated by mean monthly temperature and relative humidity.

		EMC (%)											
State	City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
KS	CONCORDIA	13.8	13.7	12.9	12.7	13.4	13.0	12.2	12.7	12.9	12.3	13.4	14.1
KS	DODGE CITY	12.7	12.7	12.0	11.4	12.3	11.6	11.1	11.5	11.6	11.3	11.9	12.6
KS	GOODLAND	12.6	12.4	11.6	10.9	11.5	10.8	10.4	10.8	10.5	10.9	12.3	12.6
KS	TOPEKA	13.7	13.6	12.9	12.4	13.3	13.6	13.3	13.4	13.4	12.9	13.1	13.9
KS	WICHITA	13.7	13.3	12.6	12.4	13.3	12.7	11.7	11.9	12.5	12.4	13.0	13.8
KY	JACKSON	13.6	12.8	11.8	11.0	13.0	13.8	14.4	14.5	13.9	13.0	12.3	13.8
KY	LEXINGTON	14.8	13.9	12.9	12.1	12.6	12.8	13.1	13.2	13.3	13.1	13.5	14.9
KY	LOUISVILLE	13.8	13.2	12.4	11.6	12.3	12.4	12.6	12.8	13.0	12.9	13.1	14.1
KY	PADUCAH	14.5	14.0	13.0	12.5	13.3	13.2	13.6	13.7	13.5	13.1	13.2	14.5
LA	BATON ROUGE	14.5	14.0	13.5	13.6	13.9	14.1	14.7	14.7	14.2	13.6	13.9	14.4
LA	LAKE CHARLES	15.2	14.7	14.6	14.5	14.7	14.7	15.1	14.8	14.6	14.0	14.5	15.2
LA	NEW ORLEANS	14.6	14.3	13.7	13.9	13.8	14.4	14.8	15.0	14.5	13.8	14.1	14.7
LA	SHREVEPORT	14.3	13.8	13.2	13.6	14.1	13.9	13.7	13.3	13.4	13.4	13.9	14.4
ME	CARIBOU	13.8	13.2	12.9	12.3	11.7	12.6	13.2	13.7	14.3	14.7	15.5	15.2
ME	PORTLAND	12.9	12.5	12.4	12.0	12.4	13.1	13.0	13.4	14.1	13.8	13.8	13.4
MD	BALTIMORE	12.4	11.8	11.5	11.2	11.9	11.8	11.9	12.6	13.0	13.0	12.5	12.6
MA	BOSTON	12.1	11.7	11.8	11.5	12.0	12.0	11.8	12.4	12.8	12.6	12.5	12.2
MA	WORCESTER	12.9	12.5	11.9	11.0	11.4	12.3	12.3	12.8	13.4	12.9	13.2	13.4
MI	ALPENA	15.3	14.5	13.8	12.6	12.1	12.5	12.8	14.1	14.7	14.7	15.2	15.8
MI	DETROIT	14.8	14.1	13.2	12.2	12.0	12.2	12.3	13.2	13.5	13.5	14.2	15.1
MI	FLINT	15.4	14.8	13.7	12.4	12.1	12.5	12.7	13.8	13.9	14.0	14.7	15.7
MI	GRAND RAPIDS	15.7	14.8	13.8	12.5	12.3	12.5	12.8	13.8	14.1	14.2	15.0	16.0
MI	HOUGHTON LAKE	16.0	15.0	13.9	12.6	11.9	12.6	12.9	14.2	15.0	15.1	16.2	16.7
MI	LANSING	15.8	15.1	14.1	12.9	12.4	12.7	12.8	13.9	14.3	14.2	15.2	16.2
MI	MUSKEGON	15.9	15.2	13.9	12.6	12.2	12.8	13.2	14.1	14.3	14.3	14.7	15.9
MI	SAULT STE. MARIE	15.3	14.7	14.3	13.2	12.5	13.8	14.2	15.0	15.8	15.6	16.4	16.3
MN	DULUTH	14.5	14.0	13.8	12.7	12.4	13.5	13.9	14.7	14.8	14.3	15.2	15.6
MN	INTERNATIONAL FALLS	14.1	13.5	13.2	12.2	12.0	13.3	14.0	14.7	15.3	14.7	15.9	15.7
MN	MINNEAPOLIS-ST.PAUL	14.0	13.8	13.3	11.8	11.7	12.3	12.4	13.1	13.4	13.1	14.2	14.9
MN	ROCHESTER	15.4	15.3	14.9	13.1	12.8	13.3	13.8	14.6	14.3	13.6	15.2	16.3
MN	SAINT CLOUD	14.5	14.3	14.1	12.4	12.2	13.2	13.5	14.2	14.4	13.9	14.9	15.3
MS	JACKSON	14.5	14.1	13.5	13.6	13.8	13.8	14.4	14.3	14.1	13.8	14.1	14.7
MS	MERIDIAN	14.6	14.0	13.4	13.5	13.8	13.8	14.3	14.2	14.0	13.7	13.7	14.5
MS	TUPELO	14.0	13.6	12.8	12.9	13.6	13.4	13.9	13.6	13.6	13.5	13.6	14.4
MO	COLUMBIA	14.4	14.1	13.2	12.7	14.0	13.9	13.7	13.7	13.9	13.6	13.9	14.9
MO	KANSAS CITY	13.7	13.6	13.0	12.5	13.5	13.6	13.4	13.6	13.6	13.0	13.5	14.3
MO	ST. LOUIS	14.2	13.7	13.0	12.3	12.7	12.5	12.5	12.9	13.1	12.8	13.2	14.3
MO	SPRINGFIELD	13.8	13.5	13.0	12.8	14.0	13.9	13.4	13.2	13.5	13.1	13.4	14.1
MT	BILLINGS	11.4	11.1	10.9	10.2	10.3	10.0	8.5	8.3	9.2	10.0	10.9	11.4
MT	GLASGOW	15.3	15.2	13.2	10.6	10.3	10.4	9.3	8.8	9.7	11.2	13.9	15.5
MT	GREAT FALLS	11.9	11.5	11.0	10.2	10.1	10.2	8.7	8.5	9.4	10.1	11.2	11.7
MT	HAVRE	13.8	13.5	12.3	10.3	10.1	10.2	8.9	8.6	9.7	10.9	12.9	14.0
MT	HELENA	12.9	12.0	10.9	10.2	10.0	10.0	8.6	8.7	9.6	10.7	12.3	13.3
MT	KALISPELL	16.0	14.6	12.6	11.1	11.0	11.6	10.2	10.0	11.2	13.0	15.7	17.1
MT	MISSOULA	16.5	14.8	12.5	10.9	11.1	11.1	9.3	9.1	10.4	12.5	15.7	17.3

Table 1. Equilibrium moisture content (EMC) of wood exposed to outdoor conditions in the United States, estimated by mean monthly temperature and relative humidity.

State	City	EMC (%)											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
NE	GRAND ISLAND	13.8	13.9	13.3	12.3	12.8	12.5	12.6	13.1	12.5	12.1	12.8	13.8
NE	LINCOLN	14.1	14.2	13.4	12.4	13.0	12.7	12.7	13.3	12.9	12.6	13.3	14.1
NE	NORFOLK	13.5	13.9	13.5	12.2	12.3	12.6	12.7	13.4	12.7	12.3	13.2	14.1
NE	NORTH PLATTE	13.7	13.6	12.9	12.2	12.7	12.8	12.5	12.9	12.3	12.3	12.9	13.7
NE	OMAHA	14.2	14.2	13.4	12.1	12.7	12.9	13.2	13.8	13.4	12.7	13.5	14.5
NE	SCOTTSBLUFF	12.3	11.6	11.0	10.6	11.0	10.6	10.3	10.5	10.5	10.9	11.8	12.6
NE	VALENTINE	13.0	13.2	12.7	11.9	11.9	11.9	11.4	11.7	11.3	11.7	12.3	12.9
NV	ELKO	13.4	12.6	10.9	9.7	9.1	8.1	6.8	6.7	7.4	8.8	11.3	13.4
NV	ELY	12.0	11.6	10.3	9.3	8.7	7.3	6.8	7.2	7.7	8.8	10.7	11.9
NV	LAS VEGAS	8.3	7.6	6.4	5.3	4.6	3.7	4.4	5.0	5.0	5.7	7.1	8.2
NV	RENO	11.9	10.7	9.3	8.7	8.4	7.8	7.2	7.4	7.9	8.9	10.5	12.1
NV	WINNEMUCCA	13.1	11.5	9.9	8.9	8.4	7.4	5.9	6.0	7.0	8.5	11.0	13.1
NH	CONCORD	12.9	12.5	12.2	11.2	11.4	12.1	12.2	12.9	13.7	13.2	13.7	13.7
NJ	ATLANTIC CITY	13.1	12.6	12.2	11.8	12.3	12.6	12.8	13.4	13.7	13.6	13.2	13.2
NJ	NEWARK	12.3	11.7	11.2	10.6	11.1	11.1	11.0	11.6	12.2	12.2	12.3	12.5
NM	ALBUQUERQUE	9.9	8.8	7.5	6.5	6.3	6.0	7.8	8.5	8.2	8.3	8.8	10.1
NM	CLAYTON	10.0	9.8	9.1	8.7	9.1	9.1	9.9	10.2	10.0	9.5	9.8	10.5
NM	ROSWELL	9.7	8.9	7.6	7.0	7.3	7.7	8.7	9.0	9.5	9.3	9.4	10.1
NY	ALBANY	13.7	12.9	12.4	11.2	11.6	12.2	12.2	13.1	13.9	13.7	13.8	14.1
NY	BINGHAMTON	14.9	14.1	13.4	12.3	12.5	13.3	13.4	14.1	14.9	14.2	14.7	15.5
NY	BUFFALO	15.1	14.8	13.9	12.8	12.2	12.5	12.3	13.0	13.5	13.5	14.3	15.2
NY	ISLIP	12.8	12.3	12.1	11.5	12.3	12.5	12.5	13.0	13.6	13.3	13.0	12.8
NY	NEW YORK	12.2	11.9	11.4	11.0	11.5	11.9	11.8	12.4	12.7	12.3	12.5	12.3
NY	ROCHESTER	14.8	14.5	13.7	12.4	12.2	12.5	12.5	13.4	14.0	14.1	14.4	15.2
NY	SYRACUSE	14.2	13.9	13.3	12.0	12.0	12.2	12.3	13.0	13.8	13.8	14.2	14.8
NC	ASHEVILLE	13.5	13.0	12.7	12.2	13.5	14.1	14.8	14.9	15.3	14.1	13.5	13.7
NC	CAPE HATTERAS	14.3	14.0	13.7	13.2	13.9	14.3	14.8	14.6	14.5	13.9	14.1	14.4
NC	CHARLOTTE	12.6	12.1	11.8	11.4	12.2	12.4	12.9	13.3	13.4	13.0	12.7	12.7
NC	GREENSBORO-WNSTN-SALM-HGHPT	12.6	12.0	11.7	11.3	12.3	12.5	13.1	13.7	13.7	13.3	12.6	12.7
NC	RALEIGH	12.7	12.2	12.0	11.6	12.5	12.7	13.2	13.9	14.0	13.5	12.8	12.8
NC	WILMINGTON	13.1	12.8	12.5	12.0	12.7	13.3	13.9	14.5	14.4	13.7	13.2	13.2
ND	BISMARCK	14.4	14.6	14.4	12.3	12.1	12.8	12.4	12.3	12.5	12.7	14.3	15.0
ND	FARGO	14.4	14.8	15.2	12.8	11.8	12.9	13.1	13.2	13.4	13.4	14.9	15.3
ND	GRAND FORKS	14.8	15.6	15.7	13.5	12.3	13.2	13.5	13.7	13.7	13.8	15.4	15.9
ND	WILLISTON	15.4	15.5	14.5	12.3	12.0	12.4	11.8	11.5	12.2	12.9	14.9	15.6
OH	AKRON	15.2	14.6	13.5	12.4	12.4	12.7	12.9	13.5	13.9	13.7	14.3	15.2
OH	CINCINNATI	14.6	13.9	12.9	12.1	12.6	12.8	13.0	13.2	13.4	13.2	13.6	14.8
OH	CLEVELAND	14.9	14.5	13.7	12.5	12.4	12.5	12.5	13.4	13.6	13.4	13.8	14.8
OH	COLUMBUS	14.3	13.8	12.7	11.9	12.3	12.4	12.6	13.1	13.2	13.1	13.6	14.8
OH	DAYTON	14.9	14.5	13.5	12.3	12.4	12.3	12.7	13.2	13.2	13.1	14.0	15.4
OH	MANSFIELD	15.7	15.2	14.2	12.7	12.6	12.9	12.9	13.7	14.0	13.5	14.6	16.0
OH	TOLEDO	15.1	14.5	13.4	12.4	12.3	12.4	12.8	13.8	14.0	13.7	14.6	15.7
OH	YOUNGSTOWN	15.2	14.5	13.7	12.4	12.4	12.9	13.1	13.7	14.3	13.8	14.4	15.5
OK	OKLAHOMA CITY	13.2	13.0	12.2	12.1	13.3	13.2	12.0	11.8	12.5	12.3	12.5	13.0
OK	TULSA	13.3	12.8	12.2	12.1	13.5	13.4	12.3	12.2	13.0	12.7	12.6	13.2

Table 1. Equilibrium moisture content (EMC) of wood exposed to outdoor conditions in the United States, estimated by mean monthly temperature and relative humidity.

		EMC (%)											
State	City	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
OR	ASTORIA	17.4	16.5	16.3	15.9	15.8	16.1	15.9	16.2	16.1	16.7	17.6	17.8
OR	BURNS	16.4	14.6	11.6	10.2	9.5	8.9	7.1	6.8	7.6	9.8	13.6	16.5
OR	EUGENE	18.9	17.0	15.4	14.2	13.7	12.7	11.0	11.1	11.9	15.0	18.7	19.9
OR	MEDFORD	16.7	13.9	12.7	11.7	10.9	10.0	8.8	8.8	9.5	11.9	15.9	17.8
OR	PENDLETON	16.0	14.1	11.5	10.6	9.8	9.1	7.2	7.4	8.5	10.9	14.7	16.4
OR	PORTLAND	16.7	14.9	14.0	13.2	12.7	12.1	11.2	11.4	12.2	14.6	16.6	17.2
OR	SALEM	17.2	15.8	14.5	13.6	13.1	12.6	11.2	11.2	12.0	14.6	17.6	18.3
OR	SEXTON SUMMIT	14.8	15.0	15.5	14.4	12.3	11.4	9.9	9.9	10.0	12.5	15.2	15.5
PA	ALLENTOWN	13.2	12.6	11.9	11.4	12.1	12.3	12.3	13.1	13.7	13.5	13.4	13.6
PA	ERIE	15.1	14.8	14.1	13.0	12.8	13.2	13.2	13.6	13.7	13.4	13.8	14.6
PA	MIDDLETOWN/HARRISBURG	12.8	12.7	12.0	11.4	11.8	11.7	11.8	12.5	13.2	13.3	13.1	13.3
PA	PHILADELPHIA	12.7	12.0	11.7	11.2	11.7	11.8	11.9	12.3	12.8	12.8	12.6	12.6
PA	PITTSBURGH	13.9	13.3	12.7	11.5	11.9	12.2	12.6	13.1	13.5	13.0	13.3	14.1
PA	AVOCA	13.7	13.1	12.4	11.5	11.8	12.6	12.5	13.3	13.9	13.5	13.6	14.1
PA	WILLIAMSPORT	13.2	12.7	12.0	11.4	12.1	12.8	12.9	13.7	14.6	14.1	13.6	13.7
RI	PROVIDENCE	12.2	11.8	11.6	11.1	11.8	12.1	12.2	12.7	13.1	12.8	12.7	12.6
SC	CHARLESTON	13.7	13.1	12.2	11.6	12.7	13.3	14.3	14.5	14.3	13.7	13.2	13.8
SC	COLUMBIA	12.9	12.4	12.1	11.5	11.9	12.2	12.7	13.2	13.4	13.1	12.9	13.0
SC	GREENVILLE-SPARTANBURG	12.2	11.8	11.6	11.5	12.3	12.5	13.0	13.5	13.6	12.9	12.5	12.5
SD	ABERDEEN	14.8	15.3	14.9	13.0	12.6	13.3	13.2	13.5	13.2	13.1	14.6	15.4
SD	HURON	14.6	15.0	14.9	13.1	13.1	13.6	13.0	13.4	13.1	13.0	14.3	15.2
SD	RAPID CITY	12.5	12.5	11.9	11.0	11.4	11.4	10.0	9.7	9.8	10.5	12.1	12.7
SD	SIOUX FALLS	14.1	14.3	14.3	12.6	12.6	13.0	12.9	13.6	13.3	12.9	13.9	14.9
TN	BRISTOL-JHNSN CTY-KNGS	14.1	13.4	12.5	12.2	13.2	13.6	14.2	14.3	14.1	13.6	13.5	14.1
TN	CHATTANOOGA	13.8	13.1	12.6	12.2	13.1	13.2	13.6	13.6	13.9	13.8	13.5	14.0
TN	KNOXVILLE	14.1	13.4	12.6	12.3	13.2	13.4	13.8	13.9	14.0	13.8	13.6	14.3
TN	MEMPHIS	13.4	12.9	12.2	12.2	12.7	12.6	12.9	12.8	13.0	12.5	12.8	13.4
TN	NASHVILLE	14.1	13.5	12.6	12.4	13.1	13.1	13.2	13.4	13.6	13.3	13.3	14.0
TX	ABILENE	11.7	11.8	10.9	10.8	12.0	11.7	10.7	10.5	11.6	11.6	11.6	11.6
TX	AMARILLO	11.2	11.4	10.4	10.0	10.9	11.0	10.5	11.1	11.4	10.9	10.8	11.2
TX	AUSTIN	13.3	13.2	12.8	13.0	13.7	13.3	12.6	12.1	12.6	12.8	13.0	13.0
TX	BROWNSVILLE	15.0	14.8	14.1	14.0	14.2	13.9	13.6	13.6	14.6	14.1	14.0	14.7
TX	CORPUS CHRISTI	15.0	14.8	14.2	14.5	15.1	14.7	14.1	13.8	14.3	13.9	13.9	14.4
TX	DALLAS	12.7	12.7	11.9	12.5	12.9	12.1	11.3	11.0	12.0	12.2	12.4	12.5
TX	DEL RIO	12.4	11.8	11.2	11.4	12.4	12.1	11.4	11.3	12.3	12.6	12.6	12.1
TX	EL PASO	8.9	7.7	6.4	5.6	5.5	6.0	8.0	8.5	8.5	8.2	8.3	9.3
TX	GALVESTON	16.1	16.4	15.2	15.5	14.7	14.2	14.0	13.9	14.0	13.5	14.1	15.3
TX	HOUSTON	14.3	14.3	13.9	13.9	14.1	14.1	14.0	13.9	14.2	13.8	14.3	14.6
TX	LUBBOCK	11.3	11.3	10.1	9.8	10.7	10.9	10.8	11.3	12.0	11.5	11.1	11.2
TX	MIDLAND-ODESSA	11.0	10.8	9.6	9.3	10.1	10.4	10.2	10.3	11.4	11.2	10.8	10.9
TX	PORT ARTHUR	15.5	15.1	14.6	14.7	14.7	14.9	15.3	15.1	14.8	14.3	14.6	15.3
TX	SAN ANGELO	11.9	11.7	10.8	10.6	11.6	11.5	10.7	10.8	12.1	12.3	11.9	11.9
TX	SAN ANTONIO	13.0	13.0	12.5	13.0	13.7	13.2	12.6	12.3	12.8	12.8	12.8	12.9
TX	VICTORIA	14.9	14.5	14.1	14.1	14.5	14.4	13.9	13.8	14.3	13.8	14.0	14.6
TX	WACO	14.0	13.9	13.1	13.3	13.9	13.1	11.8	11.5	12.6	12.9	13.3	13.7
TX	WICHITA FALLS	12.7	12.5	11.7	11.7	12.7	12.1	10.8	10.8	12.0	12.2	12.2	12.6

Table 1. Equilibrium moisture content (EMC) of wood exposed to outdoor conditions in the United States, estimated by mean monthly temperature and relative humidity.

State	City	EMC (%)											
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
UT	SALT LAKE CITY	14.6	13.1	10.6	9.7	9.0	7.8	6.8	7.1	8.1	10.0	12.6	14.9
VT	BURLINGTON	13.4	12.9	12.5	11.7	11.5	11.9	12.0	12.8	13.7	13.6	13.8	14.1
VA	LYNCHBURG	11.9	11.7	11.3	10.9	12.3	12.6	13.0	13.5	13.7	13.0	12.3	12.4
VA	NORFOLK	12.8	12.3	12.1	11.5	12.4	12.4	12.8	13.4	13.5	13.4	12.9	12.8
VA	RICHMOND	12.7	12.4	11.9	11.3	12.1	12.3	12.6	13.4	13.6	13.4	12.7	12.9
VA	ROANOKE	11.4	11.2	10.9	10.8	11.9	12.2	12.4	13.0	13.3	12.5	11.8	11.8
VA	WALLOPS ISLAND	13.3	13.0	13.0	12.8	13.5	13.7	13.8	14.3	14.1	13.8	13.4	13.5
WA	OLYMPIA	18.9	16.7	15.1	14.0	13.5	13.4	12.6	12.7	13.7	16.4	18.9	19.9
WA	QUILLAYUTE	19.7	17.4	17.0	16.1	15.9	16.1	15.7	16.1	16.1	17.9	19.6	20.2
WA	SEATTLE	16.3	14.9	14.4	13.6	12.9	12.8	12.0	12.4	13.4	15.7	16.6	16.9
WA	SPOKANE	17.7	15.5	12.8	11.1	10.5	10.0	8.3	8.2	9.4	12.2	16.9	18.5
WA	WALLA WALLA	16.2	14.3	11.9	10.7	10.6	9.5	7.7	8.0	8.8	11.5	15.2	16.7
WA	YAKIMA	15.7	13.2	10.9	9.6	9.2	9.1	8.3	8.7	9.6	11.2	14.2	16.5
WV	BECKLEY	14.3	13.7	12.8	11.6	12.8	13.8	14.4	14.7	14.9	13.6	13.2	14.2
WV	CHARLESTON	13.6	13.1	12.2	11.5	12.7	13.3	14.0	14.3	14.2	13.6	13.0	13.7
WV	ELKINS	14.2	13.8	13.3	12.5	13.3	14.2	14.9	15.2	15.0	13.9	13.8	14.5
WV	HUNTINGTON	13.9	13.2	12.3	11.5	13.0	13.5	14.0	14.3	14.5	13.5	13.2	14.1
WI	GREEN BAY	14.6	14.5	14.3	13.0	12.7	13.2	13.6	14.6	14.6	14.2	14.9	15.3
WI	LA CROSSE	14.1	14.1	13.6	12.3	12.3	12.9	13.5	14.2	14.6	13.6	14.3	15.2
WI	MADISON	14.4	14.3	13.8	12.8	12.6	12.9	13.2	14.1	14.3	13.8	14.6	15.4
WI	MILWAUKEE	14.2	14.1	13.7	13.1	13.0	13.1	13.2	14.0	14.0	13.5	14.1	14.8
WY	CASPER	12.0	11.8	11.0	10.6	10.5	9.4	8.4	8.1	8.8	9.9	11.4	12.1
WY	CHEYENNE	10.1	10.4	10.3	10.2	10.7	10.0	9.5	9.6	9.5	9.7	10.3	10.4
WY	LANDER	12.0	11.4	10.2	9.6	9.4	8.4	7.5	7.4	8.4	9.8	11.4	12.2
WY	SHERIDAN	13.0	12.8	11.8	11.0	11.4	11.2	9.3	8.9	9.8	11.1	12.7	13.2
PC	GUAM	14.9	14.2	13.9	14.1	14.5	14.8	16.2	16.8	17.0	17.0	15.9	15.0
PC	KOROR	15.0	14.7	14.3	14.2	15.0	15.5	15.4	15.0	14.7	14.7	14.8	15.0
PC	KWAJALEIN-MARSHALL IS.	14.4	14.3	14.2	15.0	15.7	15.8	16.0	15.8	15.7	15.7	15.8	15.0
PC	MAJURO-MARSHALL IS.	15.0	14.6	14.9	15.5	15.8	15.8	15.8	15.5	15.3	15.3	15.7	15.3
PC	PAGOPAGO AMER SAMOA	16.2	16.2	16.2	16.4	16.2	16.1	15.6	15.6	15.5	15.7	15.7	15.8
PC	POHNPEI-CAROLINE IS	15.9	15.7	16.2	17.0	17.6	17.6	18.1	17.9	18.1	18.1	18.1	16.8
PC	CHUUK-E CAROLINE IS.	15.0	15.0	15.2	15.7	16.2	16.4	16.6	16.4	16.2	16.2	16.0	15.9
PC	YAP-W CAROLINA IS.	15.8	15.5	15.5	15.8	16.3	16.8	17.0	16.6	16.6	16.8	16.8	16.6
PR	SAN JUAN	13.7	13.2	12.5	12.6	13.3	13.1	13.4	13.5	13.7	13.6	13.9	13.9