CHAPTER 3

CLIMATE ZONES

This chapter has been revised in its entirety; there will be no marginal markings.

SECTION 301
CLIMATE ZONES

301.1 General. Climate zones from Figure 301.1 or Table 301.1 shall be used in determining the applicable requirements from Chapters 4 and 5. Locations not in Table 301.1 (outside the US) shall be assigned a climate zone based on Section 301.3.

301.2 Warm humid counties. Warm humid counties are listed in Table 301.2.

301.3 International climate zones. The climate zone for any location outside the United States shall be determined by applying Table 301.3(1) and then Table 301.3(2).

301.3.1 Warm humid criteria. "Warm humid" locations shall be defined as locations where either of the following conditions occurs:

1. 67°F (19.4°C) or higher wet-bulb temperature for 3,000 or more hours during the warmest six consecutive months of the year;
2. 73°F (22.8°C) or higher wet-bulb temperature for 1,500 or more hours during the warmest six consecutive months of the year.

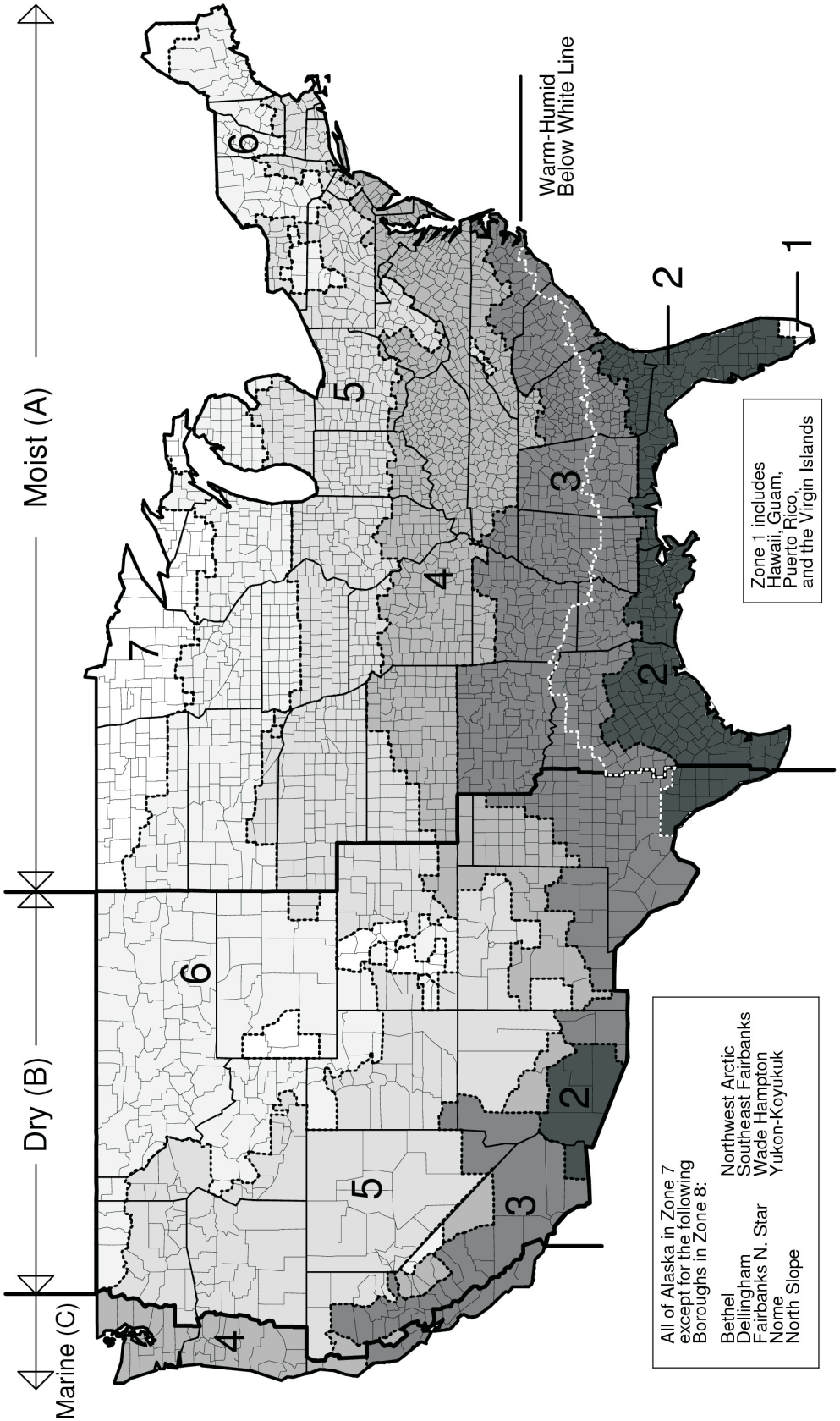


FIGURE 301.1
CLIMATE ZONES

TABLE 301.1
CLIMATE ZONES BY STATE, COUNTY AND TERRITORIES

ALABAMA

Zone 3 except

Zone 2

Baldwin
Mobile

ALASKA

Zone 7 except

Zone 8

Bethel
Dellingham
Fairbanks
Nome
North Slope
North Star
Northwest Arctic
Southeast Fairbanks
Wade Hampton
Yukon-Koyukuk

ARIZONA

Zone 3 except

Zone 2

La Paz
Maricopa
Pima
Pinal
Yuma

Zone 4

Gila
Yavapai

Zone 5

Apache
Coconino
Navajo

ARKANSAS

Zone 3 except

Zone 4

Baxter
Benton
Boone
Carroll
Fulton
Izard
Madison
Marion
Newton
Searcy
Stone
Washington

CALIFORNIA

Zone 3 Dry except

Zone 2

Imperial

Zone 3 Marine

Alameda
Marin
Mendocino
Monterey
Napa
San Benito
San Francisco
San Luis Obispo
San Mateo
Santa Barbara
Santa Clara
Santa Cruz
Sonoma
Ventura

Zone 4 Dry

Amador
Calaveras
El Dorado
Inyo
Lake
Mariposa
Trinity
Tuolumne

Zone 4 Marine

Del Norte
Humboldt

Zone 5

Lassen
Modoc
Nevada
Plumas
Sierra
Siskiyou

Zone 6

Alpine
Mono

COLORADO

Zone 5 except

Zone 4

Baca
Las Animas
Otero

Zone 6

Alamosa
Archuleta
Chaffee
Conejos
Costilla
Custer
Dolores
Eagle
Moffat
Ouray
Rio Blanco
Saguache
San Miguel

Zone 7

Clear Creek
Grand
Gunnison
Hinsdale
Jackson
Lake
Mineral
Park
Pitkin
Rio Grande
Routt
San Juan
Summit

CONNECTICUT

Zone 5

Delaware

Zone 4

DIST OF COLUMBIA

Zone 4

FLORIDA

Zone 2 except

Zone 1

Broward
Dade
Monroe

GEORGIA

Zone 3 except

Zone 2

Appling
Atkinson
Bacon
Baker
Berrien
Brantley
Brooks
Bryan
Camden
Charlton
Chatham
Clinch
Colquitt
Cook
Decatur
Echols
Effingham
Evans
Glynn
Grady
Jeff Davis
Lanier
Liberty
Long
Lowndes
McIntosh
Miller
Mitchell
Pierce
Seminole
Tattnall
Thomas
Toombs
Ware
Wayne

Zone 4

Banks
Catoosa
Chattooga
Dade
Dawson
Fannin
Floyd
Franklin
Gilmer
Gordon
Habersham
Hall
Lumpkin
Murray
Pickens
Rabun
Stephens
Towns
Union
Walker
White
Whitfield

HAWAII

Zone 1 Moist

IDAHO

Zone 6 except

Zone 5

Ada
Benewah
Canyon
Cassia
Clearwater
Elmore
Gem
Gooding
Idaho
Jerome
Kootenai
Latah
Lewis
Lincoln
Minidoka
Nez Perce
Owyhee
Payette
Power
Shoshone
Twin Falls
Washington

ILLINOIS

Zone 5 except

Zone 4

Alexander
Bond
Christian
Clay
Clinton
Crawford
Edwards
Effingham
Fayette
Franklin
Gallatin
Hamilton
Hardin
Jackson
Jasper
Jefferson
Johnson
Lawrence
Macoupin
Madison
Marion
Massac
Monroe
Montgomery
Perry
Pope
Pulaski
Randolph
Richland
Saline
Shelby

(continued)

TABLE 301.1—continued
CLIMATE ZONES BY STATE, COUNTY AND TERRITORIES

St Clair
Union
Wabash
Washington
Wayne
White
Williamson

INDIANA

Zone 5 except

Zone 4
Brown
Clark
Crawford
Daviess
Dearborn
Dubois
Floyd
Gibson
Greene
Harrison
Jackson
Jefferson
Jennings
Knox
Lawrence
Martin
Monroe
Ohio
Orange
Perry
Pike
Posey
Ripley
Scott
Spencer
Sullivan
Switzerland
Vanderburgh
Warrick
Washington

IOWA

Zone 5 except

Zone 6
Allamakee
Black Hawk
Bremer
Buchanan
Buena Vista
Butler
Calhoun
Cerro Gordo
Cherokee
Chickasaw
Clay
Clayton
Delaware
Dickinson
Emmet
Fayette
Floyd
Franklin
Grundy
Hamilton
Hancock
Hardin
Howard
Humboldt
Ida
Kossuth
Lyon
Mitchell
O'Brien
Osceola
Palo Alto
Plymouth
Pocahontas
Sac
Sioux
Webster
Winnebago
Winneshiek
Worth
Wright

KANSAS

Zone 4 except

Zone 5
Cheyenne
Cloud
Decatur
Ellis
Gove
Graham
Greeley
Hamilton
Jewell
Lane
Logan
Mitchell
Ness
Norton
Osborne
Phillips
Rawlins
Republic
Rooks
Scott
Sheridan
Sherman
Smith
Thomas
Trego
Wallace
Wichita

KENTUCKY

Zone 4

LOUISIANA

Zone 2 except

Zone 3
Bienville
Bossier
Caddo
Caldwell
Catahoula
Claiborne
Concordia
De Soto
East Carroll
Franklin
Grant
Jackson
La Salle
Lincoln
Madison
Morehouse
Natchitoches
Ouachita
Red River
Richland
Sabine
Tensas
Union
Vernon
Webster
West Carroll
Winn

MAINE

Zone 6 except

Zone 7
Aroostook

MARYLAND

Zone 4 except

Zone 5
Garrett

MASSACHUSETTS

Zone 5

MICHIGAN

Zone 5 except

Zone 6
Alcona
Alger
Alpena
Antrim
Arenac
Benzie
Charlevoix
Cheboygan
Clare
Crawford
Delta
Dickinson
Emmet
Gladwin
Grand Traverse
Huron
Iosco
Isabella
Kalkaska
Lake
Leelanau
Manistee
Marquette
Mason
Mecosta
Menominee
Missaukee
Montmorency
Newaygo
Oceana
Ogemaw
Osceola
Oscoda
Otsego
Presque Isle
Roscommon
Sanilac
Wexford

Zone 7
Baraga
Chippewa
Gogebic
Houghton
Iron
Keweenaw
Luce
Mackinac
Ontonagon
Schoolcraft

MINNESOTA

Zone 6 except

Zone 7
Aitkin
Becker
Beltrami
Carlton
Cass
Clay
Clearwater
Cook
Crow Wing
Grant
Hubbard
Itasca
Kanabec
Kittson
Koochiching
Lake Of The Woods
Mahnomen
Marshall
Mille Lacs
Norman
Otter Tail
Pennington
Pine
Polk
Red Lake
Roseau
St Louis
Wadena
Wilkin

MISSISSIPPI

Zone 3 except

Zone 2
Hancock
Harrison
Jackson
Pearl River
Stone

MISSOURI

Zone 4 except

Zone 5
Adair
Andrew
Atchison
Buchanan
Caldwell
Chariton
Clark
Clinton
Daviess
De Kalb
Gentry
Grundy

(continued)

TABLE 301.1—continued
CLIMATE ZONES BY STATE, COUNTY AND TERRITORIES

Harrison
Holt
Knox
Lewis
Linn
Livingston
Macon
Marion
Mercer
Nodaway
Pike
Putnam
Ralls
Schuyler
Scotland
Shelby
Sullivan
Worth

MONTANA

Zone 6

NEBRASKA

Zone 5

NEVADA

Zone 5 except

Zone 3
Clark

NEW HAMPSHIRE

Zone 6 except

Zone 5
Cheshire
Hillsborough
Rockingham
Strafford

NEW JERSEY

Zone 4 except

Zone 5
Bergen
Hunterdon
Mercer
Morris
Passaic
Somerset
Sussex
Warren

NEW MEXICO

Zone 4 except

Zone 3
Chaves
Dona Ana
Eddy
Hidalgo
Lea
Luna
Otero

Zone 5
Catron
Colfax
Harding
Los Alamos
McKinley
Mora
Rio Arriba
San Juan
San Miguel
Sandoval
Santa Fe
Taos
Torrance

NEW YORK

Zone 5 except

Zone 4
Bronx
Kings
Nassau
New York
Queens
Richmond
Suffolk
Westchester

Zone 6
Allegany
Broome
Cattaraugus
Chenango
Clinton
Delaware
Essex
Franklin
Fulton
Hamilton
Herkimer
Jefferson
Lewis
Madison
Montgomery
Oneida
Otsego
Schoharie
Schuyler
St Lawrence
Steuben
Sullivan
Tompkins
Ulster
Warren
Wyoming

NORTH CAROLINA

Zone 3 except

Zone 4
Alamance
Alexander
Bertie
Buncombe
Burke
Caldwell
Caswell
Catawba
Chatham
Cherokee
Clay
Cleveland
Davie
Durham
Forsyth
Franklin
Gates
Graham
Granville
Guilford
Halifax
Harnett
Haywood
Henderson
Hertford
Iredell
Jackson
Lee
Lincoln
Macon
Madison
McDowell
Nash
Northampton
Orange
Person
Polk
Rockingham
Rutherford
Stokes
Surry
Swain
Transylvania
Vance
Wake
Warren
Wilkes
Yadkin

Zone 5
Alleghany
Ashe
Avery
Mitchell
Watauga
Yancey

NORTH DAKOTA

Zone 7 except

Zone 6
Adams
Billings
Bowman
Burleigh
Dickey
Dunn
Emmons
Golden Valley
Grant
Hettinger
La Moure
Logan
McIntosh
McKenzie
Mercer
Morton
Oliver
Ransom
Richland
Sargent
Sioux
Slope
Stark

OHIO

Zone 5 except

Zone 4
Adams
Brown
Clermont
Gallia
Hamilton
Lawrence
Pike
Scioto
Washington

OKLAHOMA

Zone 3 Moist except

Zone 4 Dry
Beaver
Cimarron
Texas

OREGON

Zone 4 Marine except

Zone 5 Dry
Baker
Crook
Deschutes
Gilliam
Grant
Harney
Hood River
Jefferson
Klamath
Lake
Malheur
Morrow
Sherman
Umatilla
Union
Wallowa
Wasco
Wheeler

PENNSYLVANIA

Zone 5 except

Zone 4
Bucks
Chester
Delaware
Montgomery
Philadelphia
York

Zone 6
Cameron
Clearfield
Elk
McKean
Potter
Susquehanna
Tioga
Wayne

RHODE ISLAND

Zone 5

SOUTH CAROLINA

Zone 3

SOUTH DAKOTA

Zone 6 except

Zone 5
Bennett

(continued)

TABLE 301.1—continued
CLIMATE ZONES BY STATE, COUNTY AND TERRITORIES

Bon Homme
Charles Mix
Clay
Douglas
Gregory
Hutchinson
Jackson
Mellette
Todd
Tripp
Union
Yankton

TENNESSEE

Zone 4 except

Zone 3
Chester
Crockett
Dyer
Fayette
Hardeman
Hardin
Haywood
Henderson
Lake
Lauderdale
Madison
McNairy
Shelby
Tipton

TEXAS

Zone 2 Moist except

Zone 2 Dry
Bandera
Dimmit
Edwards
Frio
Kinney
La Salle
Maverick
Medina
Real
Uvalde
Val Verde
Webb
Zapata
Zavala

Zone 3 Dry
Andrews
Baylor
Borden
Brewster
Callahan
Childress
Coke
Coleman
Collingsworth
Concho
Cottle
Crane
Crockett
Crosby
Culberson
Dawson
Dickens
Ector
El Paso
Fisher
Foard
Gaines
Garza
Glasscock
Hall
Hardeman
Haskell
Hemphill
Howard
Hudspeth
Irion
Jeff Davis
Jones
Kent
Kerr
Kimble
King
Knox
Loving
Lubbock
Lynn
Martin
Mason
Mcculloch
Menard
Midland
Mitchell
Motley
Nolan
Pecos
Presidio
Reagan
Reeves
Runnels
Schleicher
Scurry
Shackelford
Sterling
Stonewall
Sutton
Taylor
Terrell
Terry
Throckmorton
Tom Green
Upton
Ward
Wheeler
Wilbarger
Winkler

Zone 3 Moist
Archer
Blanco
Bowie
Brown
Burnet
Camp
Cass
Clay
Collin
Comanche
Cooke
Dallas
Delta
Denton
Eastland
Ellis
Erath
Fannin
Franklin
Gillespie
Grayson
Gregg
Hamilton
Harrison
Henderson
Hood
Hopkins
Hunt
Jack
Johnson
Kaufman
Kendall
Lamar
Lampasas
Llano
Marion
Mills
Montague
Morris
Nacogdoches
Navarro
Palo Pinto
Panola
Parker
Rains
Red River
Rockwall
Rusk
Sabine
San Augustine
San Saba
Shelby
Smith
Somervell
Stephens
Tarrant
Titus
Upshur
Van Zandt
Wichita
Wise
Wood
Young

Zone 4
Armstrong
Bailey
Briscoe
Carson
Castro
Cochran
Dallam
Deaf Smith
Donley
Floyd
Gray
Hale
Hansford
Hartley
Hockley
Hutchinson
Lamb
Lipscomb
Moore
Ochiltree
Oldham
Parmer
Potter
Randall
Roberts
Sherman
Swisher
Yoakum

UTAH

Zone 5 except

Zone 3
Washington

Zone 6
Box Elder
Cache
Carbon
Daggett
Duchesne
Morgan
Rich
Summit
Uintah
Wasatch

VERMONT

Zone 6

VIRGINIA

Zone 4

WASHINGTON

Zone 4 Marine except

Zone 5 Dry
Adams
Asotin
Benton
Chelan
Columbia
Douglas
Franklin
Garfield
Grant
Kittitas
Klickitat
Lincoln
Skamania
Spokane
Walla Walla
Whitman
Yakima

Zone 6 Dry
Ferry
Okanogan
Pend Oreille
Stevens

WEST VIRGINIA

Zone 5 except

Zone 4
Berkeley
Boone
Braxton
Cabell
Calhoun
Clay
Gilmer
Jackson
Jefferson
Kanawha

(continued)

TABLE 301.1—continued
CLIMATE ZONES BY STATE, COUNTY AND TERRITORIES

Lincoln
Logan
Mason
McDowell
Mercer
Mingo
Monroe
Morgan
Pleasants
Putnam
Ritchie
Roane
Tyler
Wayne
Wirt
Wood
Wyoming

WISCONSIN

Zone 6 except

Zone 7
Ashland
Bayfield
Burnett
Douglas
Florence
Forest
Iron
Langlade
Lincoln
Oneida
Price
Sawyer
Taylor
Vilas
Washburn

WYOMING

Zone 6 except

Zone 5
Goshen
Platte

Zone 7
Lincoln
Sublette
Teto

TERRITORIES

AMERICAN SAMOA

Zone 1 Moist

GUAM

Zone 1 Moist

NORTHERN MARIANAS

Zone 1 Moist

PUERTO RICO

Zone 1 Moist

U.S. VIRGIN ISLANDS

Zone 1 Moist

TABLE 301.2
WARM HUMID COUNTIES AND TERRITORIES

ALABAMA
Autauga
Baldwin
Barbour
Bullock
Butler
Choctaw
Clarke
Coffee
Conecuh
Covington
Crenshaw
Dale
Dallas
Elmore
Escambia
Geneva
Henry
Houston
Lowndes
Macon
Marengo
Mobile
Monroe
Montgomery
Perry
Pike
Russell
Washington
Wilcox

ARKANSAS
Columbia
Hempstead
Lafayette
Little River
Miller
Sevier
Union

FLORIDA
All

GEORGIA
All in Zone 2 Plus
Ben Hill
Bleckley
Bulloch
Calhoun
Candler
Chattahoochee
Clay
Coffee
Crisp
Dodge
Dooly
Dougherty
Early
Emanuel
Houston
Irwin
Jenkins
Johnson
Laurens
Lee
Macon
Marion
Montgomery
Peach
Pulaski
Quitman
Randolph
Schley
Screven
Stewart
Sumter
Taylor
Telfair
Terrell
Tift
Treutlen
Turner
Twiggs
Webster
Wheeler
Wilcox
Worth

HAWAII
All

LOUISIANA
All in Zone 2 Plus
Bienville
Bossier
Caddo
Caldwell
Catahoula
Claiborne
Concordia
De Soto
Franklin
Grant
Jackson
La Salle
Lincoln
Madison
Natchitoches
Ouachita
Red River
Richland
Sabine
Tensas
Union
Vernon
Webster
Winn

MISSISSIPPI
All in Zone 2 Plus
Adams
Amite
Claiborne
Copiah
Covington
Forrest
Franklin
George
Greene
Hinds
Jefferson
Jefferson Davis
Jones
Lamar
Lawrence
Lincoln
Marion
Perry
Pike
Rankin
Simpson
Smith
Walthall
Warren
Wayne
Wilkinson

NORTH CAROLINA
Brunswick
Carteret
Columbus
New Hanover
Onslow
Pender

SOUTH CAROLINA
Allendale
Bamberg
Barnwell
Beaufort
Berkeley
Charleston
Colleton
Dorchester
Georgetown
Hampton
Horry
Jasper

TEXAS
All in Zone 2 Plus
Blanco
Bowie
Brown
Burnet
Camp
Cass
Collin
Comanche
Dallas
Delta
Denton
Ellis
Erath
Franklin
Gillespie
Gregg
Hamilton
Harrison
Henderson
Hood
Hopkins
Hunt
Johnson
Kaufman
Kendall
Lamar
Lampasas
Llano
Marion
Mills
Morris
Nacogdoches
Navarro
Palo Pinto
Panola
Parker
Rains
Red River
Rockwall
Rusk
Sabine
San Augustine
San Saba
Shelby
Smith
Somervell
Tarrant
Titus
Upshur
Van Zandt
Wood

TERRITORIES

AMERICAN SAMOA
All

GUAM
All

NORTHERN MARIANAS
All

PUERTO RICO
All

U.S. VIRGIN ISLANDS
All

TABLE 301.3(1)
INTERNATIONAL CLIMATE ZONE DEFINITIONS

MAJOR CLIMATE TYPE DEFINITIONS
Marine (C) Definition - Locations meeting all four criteria: 1. Mean temperature of coldest month between -3°C (27°F) and 18°C (65°F) 2. Warmest month mean < 22°C (72°F) 3. At least four months with mean temperatures over 10°C (50°F) 4. Dry season in summer. The month with the heaviest precipitation in the cold season has at least three times as much precipitation as the month with the least precipitation in the rest of the year. The cold season is October through March in the Northern Hemisphere and April through September in the Southern Hemisphere.
Dry (B) Definition - Locations meeting the following criteria: Not Marine and $P_{in} < 0.44 \times (TF - 19.5)$ [$P_{cm} < 2.0 \times (TC + 7)$ in SI units] where: P_{in} = Annual precipitation in inches (cm) T = Annual mean temperature in °F (°C)
Moist (A) Definition - Locations that are not Marine and not Dry.

For SI: °C = [(°F)-32]/1.8; 1 inch = 2.54 cm.

TABLE 301.3(2)
INTERNATIONAL CLIMATE ZONE DEFINITIONS

ZONE NUMBER	THERMAL CRITERIA	
	IP Units	SI Units
1	9000 < CDD50°F	5000 < CDD10°C
2	6300 < CDD50°F ≤ 9000	3500 < CDD10°C ≤ 5000
3A and 3B	4500 < CDD50°F ≤ 6300 AND HDD65°F ≤ 5400	2500 < CDD10°C ≤ 3500 AND HDD18°C ≤ 3000
4A and 4B	CDD50°F ≤ 4500 AND HDD65°F ≤ 5400	CDD10°C ≤ 2500 AND HDD18°C ≤ 3000
3C	HDD65°F ≤ 3600	HDD18°C ≤ 2000
4C	3600 < HDD65°F ≤ 5400	2000 < HDD18°C ≤ 3000
5	5400 < HDD65°F ≤ 7200	3000 < HDD18°C ≤4000
6	7200 < HDD65°F ≤ 9000	4000 < HDD18°C ≤ 5000
7	9000 < HDD65°F ≤ 12600	5000 < HDD18°C ≤ 7000
8	12600 < HDD65°F	7000 < HDD18 °C

For SI: °C = [(°F)-32]/1.8

SECTION 302
DESIGN CONDITIONS

302.1 Interior design conditions. The interior design temperatures used for heating and cooling load calculations shall be a maximum of 72°F (22°C) for heating and minimum of 75°F (24°C) for cooling.