

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.

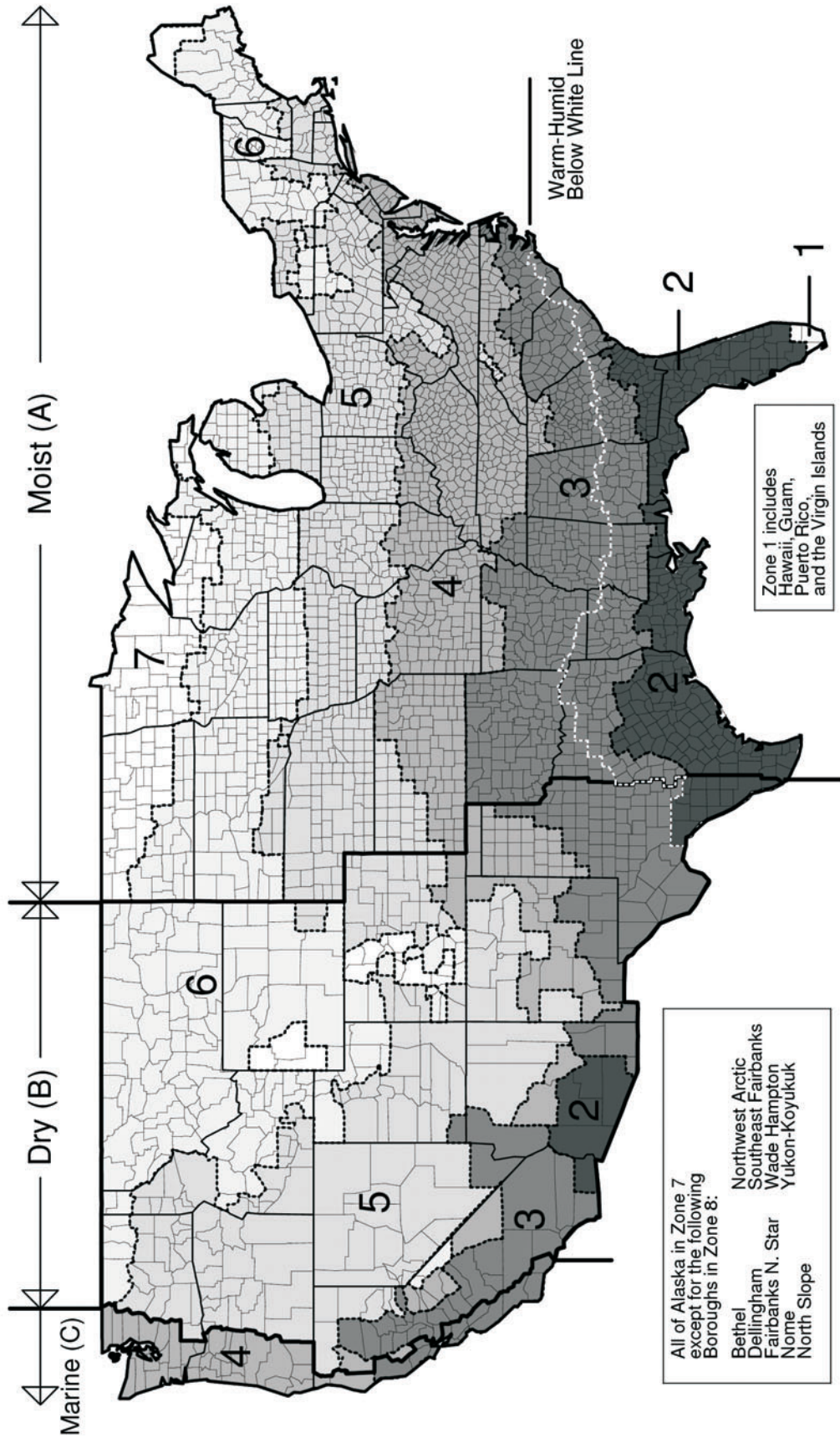


FIGURE 301.1
CLIMATE ZONES

**TABLE 301.1
CLIMATE ZONES BY STATE, COUNTY AND TERRITORIES**

ALABAMA	Boone	Humboldt	Pitkin	Echols
Zone 3 except	Carroll	Zone 5	Rio Grande	Effingham
Zone 2	Fulton	Lassen	Routt	Evans
Baldwin	Izard	Modoc	San Juan	Glynn
Mobile	Madison	Nevada	Summit	Grady
	Marion	Plumas		Jeff Davis
ALASKA	Newton	Sierra	CONNECTICUT	Lanier
Zone 7 except	Searcy	Siskiyou	Zone 5	Liberty
Zone 8	Stone	Zone 6		Long
Bethel	Washington	Alpine	DELAWARE	Lowndes
Dellingham		Mono	Zone 4	McIntosh
Fairbanks	CALIFORNIA			Miller
Nome	Zone 3 Dry except	COLORADO	DISTRICT OF	Mitchell
North Slope	Zone 2	Zone 5 except	COLUMBIA	Pierce
North Star	Imperial	Zone 4	Zone 4	Seminole
Northwest Arctic	Zone 3 Marine	Baca		Tattnall
Southeast Fairbanks	Alameda	Las Animas	FLORIDA	Thomas
Wade Hampton	Marin	Otero	Zone 2 except	Toombs
Yukon-Koyukuk	Mendocino	Zone 6	Zone 1	Ware
	Monterey	Alamosa	Broward	Wayne
ARIZONA	Napa	Archuleta	Dade	Zone 4
Zone 3 except	San Benito	Chaffee	Monroe	Banks
Zone 2	San Francisco	Conejos		Catoosa
La Paz	San Luis Obispo	Costilla	GEORGIA	Chattooga
Maricopa	San Mateo	Custer	Zone 3 except	Dade
Pima	Santa Barbara	Dolores	Zone 2	Dawson
Pinal	Santa Clara	Eagle	Appling	Fannin
Yuma	Santa Cruz	Moffat	Atkinson	Floyd
Zone 4	Sonoma	Ouray	Bacon	Franklin
Gila	Ventura	Rio Blanco	Baker	Gilmer
Yavapai	Zone 4 Dry	Saguache	Berrien	Gordon
Zone 5	Amador	San Miguel	Brantley	Habersham
Apache	Calaveras	Zone 7	Brooks	Hall
Coconino	El Dorado	Clear Creek	Bryan	Lumpkin
Navajo	Inyo	Grand	Camden	Murray
	Lake	Gunnison	Charlton	Pickens
ARKANSAS	Mariposa	Hinsdale	Chatham	Rabun
Zone 3 except	Trinity	Jackson	Clinch	Stephens
Zone 4	Tuolumne	Lake	Colquitt	Towns
Baxter	Zone 4 Marine	Mineral	Cook	Union
Benton	Del Norte	Park	Decatur	Walker

(continued)

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

White	Crawford	Daviess	Chickasaw	Graham
Whitfield	Edwards	Dearborn	Clay	Greeley
	Effingham	Dubois	Clayton	Hamilton
HAWAII	Fayette	Floyd	Delaware	Jewell
Zone 1 Moist	Franklin	Gibson	Dickinson	Lane
	Gallatin	Greene	Emmet	Logan
IDAHO	Hamilton	Harrison	Fayette	Mitchell
Zone 6 except	Hardin	Jackson	Floyd	Ness
Zone 5	Jackson	Jefferson	Franklin	Norton
Ada	Jasper	Jennings	Grundy	Osborne
Benewah	Jefferson	Knox	Hamilton	Phillips
Canyon	Johnson	Lawrence	Hancock	Rawlins
Cassia	Lawrence	Martin	Hardin	Republic
Clearwater	Macoupin	Monroe	Howard	Rooks
Elmore	Madison	Ohio	Humboldt	Scott
Gem	Marion	Orange	Ida	Sheridan
Gooding	Massac	Perry	Kossuth	Sherman
Idaho	Monroe	Pike	Lyon	Smith
Jerome	Montgomery	Posey	Mitchell	Thomas
Kootenai	Perry	Ripley	O'Brien	Trego
Latah	Pope	Scott	Osceola	Wallace
Lewis	Pulaski	Spencer	Palo Alto	Wichita
Lincoln	Randolph	Sullivan	Plymouth	
Minidoka	Richland	Switzerland	Pocahontas	KENTUCKY
Nez Perce	Saline	Vanderburgh	Sac	Zone 4
Owyhee	Shelby	Warrick	Sioux	
Payette	St Clair	Washington	Webster	LOUISIANA
Power	Union		Winnebago	Zone 2 except
Shoshone	Wabash	IOWA	Winneshiek	Zone 3
Twin Falls	Washington	Zone 5 except	Worth	Bienville
Washington	Wayne	Zone 6	Wright	Bossier
	White	Allamakee		Caddo
ILLINOIS	Williamson	Black Hawk	KANSAS	Caldwell
Zone 5 except		Bremer	Zone 4 except	Catahoula
Zone 4	INDIANA	Buchanan	Zone 5	Claiborne
Alexander	Zone 5 except	Buena Vista	Cheyenne	Concordia
Bond	Zone 4	Butler	Cloud	De Soto
Christian	Brown	Calhoun	Decatur	East Carroll
Clay	Clark	Cerro Gordo	Ellis	Franklin
Clinton	Crawford	Cherokee	Gove	Grant

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

Jackson	Clare	Schoolcraft	Stone	
La Salle	Crawford	MINNESOTA	MISSOURI	NEVADA
Lincoln	Delta	Zone 6 except	Zone 4 except	Zone 5 except
Madison	Dickinson	Zone 7	Zone 5	Zone 3
Morehouse	Emmet	Aitkin	Adair	Clark
Natchitoches	Gladwin	Becker	Andrew	
Ouachita	Grand Traverse	Beltrami	Atchison	NEW
Red River	Huron	Carlton	Buchanan	HAMPSHIRE
Richland	Iosco	Cass	Caldwell	Zone 6 except
Sabine	Isabella	Clay	Chariton	Zone 5
Tensas	Kalkaska	Clearwater	Clark	Cheshire
Union	Lake	Cook	Clinton	Hillsborough
Vernon	Leelanau	Crow Wing	Daviess	Rockingham
Webster	Manistee	Grant	De Kalb	Strafford
West Carroll	Marquette	Hubbard	Gentry	
Winn	Mason	Itasca	Grundy	NEW JERSEY
	Mecosta	Kanabec	Harrison	Zone 4 except
MAINE	Menominee	Kittson	Holt	Zone 5
Zone 6 except	Missaukee	Koochiching	Knox	Bergen
Zone 7	Montmorency	Lake Of The Woods	Lewis	Hunterdon
Aroostook	Newaygo	Mahnomen	Linn	Mercer
	Oceana	Marshall	Livingston	Morris
MARYLAND	Ogemaw	Mille Lacs	Macon	Passaic
Zone 4 except	Osceola	Norman	Marion	Somerset
Zone 5	Oscoda	Otter Tail	Mercer	Sussex
Garrett	Otsego	Pennington	Nodaway	Warren
	Presque Isle	Pine	Pike	
MASSACHUSETTS	Roscommon	Polk	Putnam	NEW MEXICO
Zone 5	Sanilac	Red Lake	Ralls	Zone 4 except
	Wexford	Roseau	Schuyler	Zone 3
MICHIGAN	Zone 7	St Louis	Scotland	Chaves
Zone 5 except	Baraga	Wadena	Shelby	Dona Ana
Zone 6	Chippewa	Wilkin	Sullivan	Eddy
Alcona	Gogebic		Worth	Hidalgo
Alger	Houghton	MISSISSIPPI		Lea
Alpena	Iron	Zone 3 except	MONTANA	Luna
Antrim	Keweenaw	Zone 2	Zone 6	Otero
Arenac	Luce	Hancock		Zone 5
Benzie	Mackinac	Harrison		Catron
Charlevoix	Ontonagon	Jackson	NEBRASKA	Colfax
Cheboygan		Pearl River	Zone 5	Harding

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

Los Alamos	Schuyler	Lincoln	La Moure	Grant
McKinley	St Lawrence	Macon	Logan	Harney
Mora	Steuben	Madison	McIntosh	Hood River
Rio Arriba	Sullivan	McDowell	McKenzie	Jefferson
San Juan	Tompkins	Nash	Mercer	Klamath
San Miguel	Ulster	Northampton	Morton	Lake
Sandoval	Warren	Orange	Oliver	Malheur
Santa Fe	Wyoming	Person	Ransom	Morrow
Taos		Polk	Richland	Sherman
Torrance	NORTH	Rockingham	Sargent	Umatilla
	CAROLINA	Rutherford	Sioux	Union
NEW YORK	Zone 3 except	Stokes	Slope	Wallowa
Zone 5 except	Zone 4	Surry	Stark	Wasco
Zone 4	Alamance	Swain		Wheeler
Bronx	Alexander	Transylvania	OHIO	
Kings	Bertie	Vance	Zone 5 except	PENNSYLVANIA
Nassau	Buncombe	Wake	Zone 4	Zone 5 except
New York	Burke	Warren	Adams	Zone 4
Queens	Caldwell	Wilkes	Brown	Bucks
Richmond	Caswell	Yadkin	Clermont	Chester
Suffolk	Catawba	Zone 5	Gallia	Delaware
Westchester	Chatham	Alleghany	Hamilton	Montgomery
Zone 6	Cherokee	Ashe	Lawrence	Philadelphia
Allegany	Clay	Avery	Pike	York
Broome	Cleveland	Mitchell	Scioto	Zone 6
Cattaraugus	Davie	Watauga	Washington	Cameron
Chenango	Durham	Yancey		Clearfield
Clinton	Forsyth		OKLAHOMA	Elk
Delaware	Franklin	NORTH DAKOTA	Zone 3 Moist except	McKean
Essex	Gates	Zone 7 except	Zone 4 Dry	Potter
Franklin	Graham	Zone 6	Beaver	Susquehanna
Fulton	Granville	Adams	Cimarron	Tioga
Hamilton	Guilford	Billings	Texas	Wayne
Herkimer	Halifax	Bowman		
Jefferson	Harnett	Burleigh	OREGON	RHODE ISLAND
Lewis	Haywood	Dickey	Zone 4 Marine	Zone 5
Madison	Henderson	Dunn	except	
Montgomery	Hertford	Emmons	Zone 5 Dry	
Oneida	Iredell	Golden Valley	Baker	SOUTH
Otsego	Jackson	Grant	Crook	CAROLINA
Schoharie	Lee	Hettinger	Deschutes	Zone 3
			Gilliam	

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

SOUTH DAKOTA	Frio	Hudspeth	Zone 3 Moist	Navarro
Zone 6 except	Kinney	Irion	Archer	Palo Pinto
Zone 5	La Salle	Jeff Davis	Blanco	Panola
Bennett	Maverick	Jones	Bowie	Parker
Bon Homme	Medina	Kent	Brown	Rains
Charles Mix	Real	Kerr	Burnet	Red River
Clay	Uvalde	Kimble	Camp	Rockwall
Douglas	Val Verde	King	Cass	Rusk
Gregory	Webb	Knox	Clay	Sabine
Hutchinson	Zapata	Loving	Collin	San Augustine
Jackson	Zavala	Lubbock	Comanche	San Saba
Mellette	Zone 3 Dry	Lynn	Cooke	Shelby
Todd	Andrews	Martin	Dallas	Smith
Tripp	Baylor	Mason	Delta	Somervell
Union	Borden	Mcculloch	Denton	Stephens
Yankton	Brewster	Menard	Eastland	Tarrant
	Callahan	Midland	Ellis	Titus
TENNESSEE	Childress	Mitchell	Erath	Upshur
Zone 4 except	Coke	Motley	Fannin	Van Zandt
Zone 3	Coleman	Nolan	Franklin	Wichita
Chester	Collingsworth	Pecos	Gillespie	Wise
Crockett	Concho	Presidio	Grayson	Wood
Dyer	Cottle	Reagan	Gregg	Young
Fayette	Crane	Reeves	Hamilton	Zone 4
Hardeman	Crockett	Runnels	Harrison	Armstrong
Hardin	Crosby	Schleicher	Henderson	Bailey
Haywood	Culberson	Scurry	Hood	Briscoe
Henderson	Dawson	Shackelford	Hopkins	Carson
Lake	Dickens	Sterling	Hunt	Castro
Lauderdale	Ector	Stonewall	Jack	Cochran
Madison	El Paso	Sutton	Johnson	Dallam
McNairy	Fisher	Taylor	Kaufman	Deaf Smith
Shelby	Foard	Terrell	Kendall	Donley
Tipton	Gaines	Terry	Lamar	Floyd
	Garza	Throckmorton	Lampasas	Gray
TEXAS	Glasscock	Tom Green	Llano	Hale
Zone 2 Moist except	Hall	Upton	Marion	Hansford
Zone 2 Dry	Hardeman	Ward	Mills	Hartley
Bandera	Haskell	Wheeler	Montague	Hockley
Dimmit	Hemphill	Wilbarger	Morris	Hutchinson
Edwards	Howard	Winkler	Nacogdoches	Lamb

(continued)

CLIMATE ZONES

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

Lipscomb	Asotin	Mercer	Lincoln
Moore	Benton	Mingo	Sublette
Ochiltree	Chelan	Monroe	Teto
Oldham	Columbia	Morgan	
Parmer	Douglas	Pleasants	TERRITORIES
Potter	Franklin	Putnam	AMERICAN
Randall	Garfield	Ritchie	SAMOA
Roberts	Grant	Roane	Zone 1 Moist
Sherman	Kittitas	Tyler	
Swisher	Klickitat	Wayne	GUAM
Yoakum	Lincoln	Wirt	Zone 1 Moist
	Skamania	Wood	
UTAH	Spokane	Wyoming	NORTHERN
Zone 5 except	Walla Walla		MARIANAS
Zone 3	Whitman	WISCONSIN	Zone 1 Moist
Washington	Yakima	Zone 6 except	
Zone 6	Zone 6 Dry	Zone 7	PUERTO RICO
Box Elder	Ferry	Ashland	Zone 1 Moist
Cache	Okanogan	Bayfield	
Carbon	Pend Oreille	Burnett	U.S. VIRGIN
Daggett	Stevens	Douglas	ISLANDS
Duchesne		Florence	Zone 1 Moist
Morgan	WEST VIRGINIA	Forest	
Rich	Zone 5 except	Iron	
Summit	Zone 4	Langlade	
Uintah	Berkeley	Lincoln	
Wasatch	Boone	Oneida	
	Braxton	Price	
VERMONT	Cabell	Sawyer	
Zone 6	Calhoun	Taylor	
	Clay	Vilas	
VIRGINIA	Gilmer	Washburn	
Zone 4	Jackson		
	Jefferson	WYOMING	
WASHINGTON	Kanawha	Zone 6 except	
Zone 4 Marine	Lincoln	Zone 5	
except	Logan	Goshen	
Zone 5 Dry	Mason	Platte	
Adams	McDowell	Zone 7	

TABLE 301.2
WARM HUMID COUNTIES AND TERRITORIES

ALABAMA	GEORGIA	Wilcox	George	TEXAS
Autauga	All in Zone 2 Plus	Worth	Greene	All in Zone 2 Plus
Baldwin	Ben Hill		Hinds	Blanco
Barbour	Bleckley	HAWAII	Jefferson	Bowie
Bullock	Bulloch	All	Jefferson Davis	Brown
Butler	Calhoun		Jones	Burnet
Choctaw	Candler	LOUISIANA	Lamar	Camp
Clarke	Chattahoochee	All in Zone 2 Plus	Lawrence	Cass
Coffee	Clay	Bienville	Lincoln	Collin
Conecuh	Coffee	Bossier	Marion	Comanche
Covington	Crisp	Caddo	Perry	Dallas
Crenshaw	Dodge	Caldwell	Pike	Delta
Dale	Dooly	Catahoula	Rankin	Denton
Dallas	Dougherty	Claiborne	Simpson	Ellis
Elmore	Early	Concordia	Smith	Erath
Escambia	Emanuel	De Soto	Walthall	Franklin
Geneva	Houston	Franklin	Warren	Gillespie
Henry	Irwin	Grant	Wayne	Gregg
Houston	Jenkins	Jackson	Wilkinson	Hamilton
Lowndes	Johnson	La Salle		Harrison
Macon	Laurens	Lincoln	NORTH	Henderson
Marengo	Lee	Madison	CAROLINA	Hood
Mobile	Macon	Natchitoches	Brunswick	Hopkins
Monroe	Marion	Ouachita	Carteret	Hunt
Montgomery	Montgomery	Red River	Columbus	Johnson
Perry	Peach	Richland	New Hanover	Kaufman
Pike	Pulaski	Sabine	Onslow	Kendall
Russell	Quitman	Tensas	Pender	Lamar
Washington	Randolph	Union		Lampasas
Wilcox	Schley	Vernon	SOUTH	Llano
	Screven	Webster	CAROLINA	Marion
ARKANSAS	Stewart	Winn	Allendale	Mills
Columbia	Sumter		Bamberg	Morris
Hempstead	Taylor	MISSISSIPPI	Barnwell	Nacogdoches
Lafayette	Telfair	All in Zone 2 Plus	Beaufort	Navarro
Little River	Terrell	Adams	Berkeley	Palo Pinto
Miller	Tift	Amite	Charleston	Panola
Sevier	Treutlen	Claiborne	Colleton	Parker
Union	Turner	Copiah	Dorchester	Rains
	Twiggs	Covington	Georgetown	Red River
FLORIDA	Webster	Forrest	Hampton	Rockwall
All	Wheeler	Franklin	Horry	Rusk
			Jasper	

CLIMATE ZONES

Sabine	PUERTO RICO
San Augustine	All
San Saba	
Shelby	U.S. VIRGIN ISLANDS
Smith	
Somervell	All
Tarrant	
Titus	
Upshur	
Van Zandt	
Wood	

TERRITORIES

AMERICAN SAMOA
All

GUAM
All

NORTHERN MARIANAS
All

TABLE 301.3(1)
INTERNATIONAL CLIMATE ZONE DEFINITIONS

MAJOR CLIMATE TYPE DEFINITIONS
<p>Marine (C) Definition - Locations meeting all four criteria:</p> <ol style="list-style-type: none"> 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.
<p>Dry (B) Definition - Locations meeting the following criteria: Not Marine and</p> $P_{in} < 0.44 \times (TF - 19.5) \quad [P_{cm} < 2.0 \times (TC + 7) \text{ in SI units}]$ <p>where:</p> <p>P_{in} = Annual precipitation in inches (cm)</p> <p>T = Annual mean temperature in °F (°C)</p>
<p>Moist (A) Definition - Locations that are not Marine and not Dry.</p>

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.

