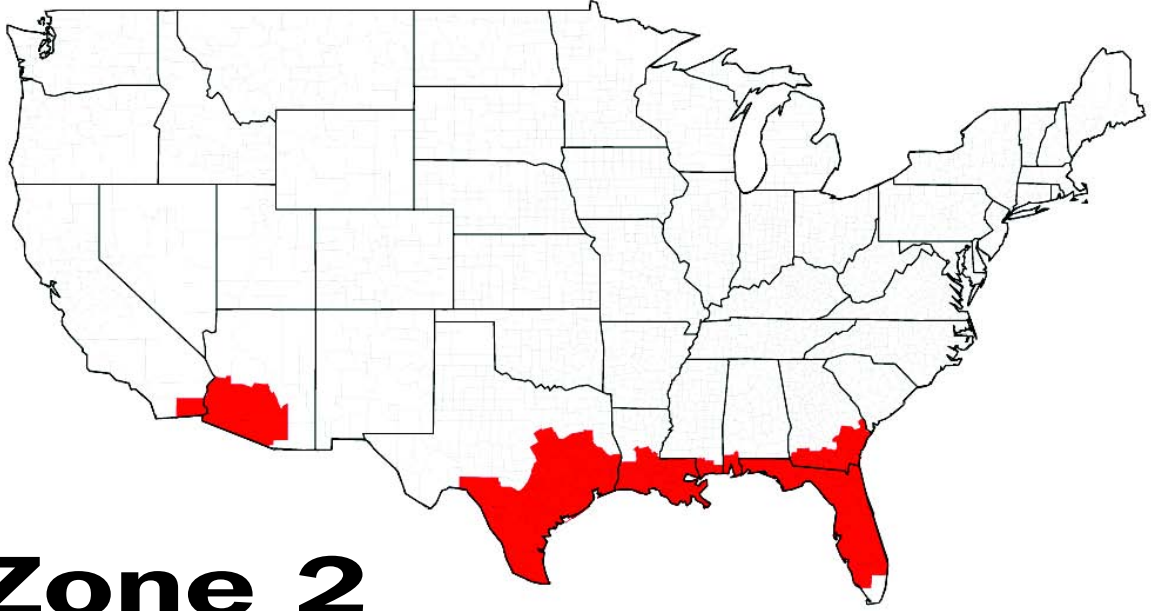


Climate Zone 1 Recommendation Table for Small Retail Buildings

|   | Item  | Component   | Recommendation<br>(Minimum or Maximum)   | How-To Tips in<br>Chapter 5 | ✓                       |  |
|---|---|---|--|-----------------------------|-------------------------|--|
| Envelope                                  | Roof  | Insulation entirely above deck  | R-15 c.i.  | EN1-2, 17, 20-21            |                         |  |
|   |   | Metal building  | R-19   | EN1, 3, 17, 20-21           |                         |  |
|   |   | Attic and other   | R-30   | EN4, 17-18, 20-21           |                         |  |
|   |   | Single rafter   | R-30   | EN5, 17, 20-21              |                         |  |
|   |   | Solar reflectance index (SRI)   | 78   | EN1                         |                         |  |
|   | Walls   | Mass (HC > 7 Btu/ft <sup>2</sup> )  | No recommendation  | EN6, 17, 20-21              |                         |  |
|   |   | Metal building  | R-13   | EN7, 17, 20-21              |                         |  |
|   |   | Steel framed  | R-13   | EN8, 17, 20-21              |                         |  |
|   |   | Wood framed and other   | R-13   | EN9, 17, 20-21              |                         |  |
|   |   | Below-grade walls   | No recommendation  | EN10, 17, 20-21             |                         |  |
|   | Floors  | Mass  | R-4.2 c.i.   | EN11, 17, 20-21             |                         |  |
|   |   | Steel framed  | R-19   | EN12, 17, 20-21             |                         |  |
|   |   | Wood framed and other   | R-19   | EN12, 17, 20-21             |                         |  |
|   | Slabs   | Unheated  | No recommendation  | EN13, 17, 19-21             |                         |  |
|   |   | Heated  | R-7.5 for 12 in.   | EN14, 17, 19-21             |                         |  |
|   | Doors—<br>Opaque                                      | Swinging  | U-0.70   | EN15, 20-21                 |                         |  |
| Non-swinging                              |   | U-1.45  | EN16, 20-21  |                             |                         |  |
| Vertical<br>Glazing<br>Including<br>Doors | Area (percent of gross wall)                          | 40%   | EN22-23, 27, 28, 29  |                             |                         |  |
|   | Thermal transmittance                                 | U-0.69  | EN22, 25   |                             |                         |  |
|   | Solar heat gain coefficient (SHGC)                    | N, S, E, W - 0.44; N only—0.44  | EN22   |                             |                         |  |
| Doors                                     | Exterior sun control (S, E, W only)                   | Projection factor > 0.5   | EN26, DL3  |                             |                         |  |
|   | Skylights   | Area (percent of gross roof)  | 3%   | EN24                        |                         |  |
| Lighting                                  | Interior<br>Lighting                                  | Thermal transmittance   | U-1.36   |                             |                         |  |
|   |   | Solar heat gain coefficient (SHGC)  | 0.19   | DL3-10                      |                         |  |
|   |   | Lighting power density (LPD)  | 1.3 W/ft <sup>2</sup>  | EL1, 3, 4, 14, 16-25        |                         |  |
|   |   | Linear fluorescent with high-performance electronic ballast   | 91 mean lm/W   | EL7, 8                      |                         |  |
|   |   | All other sources   | 50 mean lm/W   | EL9,10                      |                         |  |
|   |   | Dimming controls for daylight harvesting under skylights  | Dim fixtures within 10 ft of skylight edge   | DL1-9, EL15                 |                         |  |
|   | Additional<br>Interior<br>Lighting for<br>Sales Floor | Occupancy controls  | Auto-off all non-sales rooms   | EL13                        |                         |  |
|   |   | Interior room surface reflectances in locations with daylighting  | 80%+ on ceilings, 70%+ on walls  | DL2, EL5                    |                         |  |
|   |   | Additional LPD for adjustable lighting equipment that is specifically designed and directed to highlight merchandise and is automatically controlled separately from the general lighting | 0.4 W/ft <sup>2</sup> (spaces not listed below)<br>0.6 W/ft <sup>2</sup> (sporting goods, small electronics)<br>0.9 W/ft <sup>2</sup> (furniture, clothing, cosmetics, and artwork)<br>1.5 W/ft <sup>2</sup> (jewelry, crystal, china) | EL1, 2, 10, 11, 14, 20, 21  |                         |  |
|   | Exterior<br>Lighting                                  | Sources   | Halogen IR or CMH  | EL10-12                     |                         |  |
|   |   | Façade and externally illuminated signage lighting  | 0.2 W/ft <sup>2</sup>  | EX2, 3, EL5, EL7-12         |                         |  |
|   | HVAC  | HVAC  | Air conditioner (0-65 kBtuh)   | 13.0 SEER                   | HV1-4, 6, 12, 16-17, 20 |  |
|   |   |   | Air conditioner (>65-135 kBtuh)  | 11.3 EER/11.5 IPLV          | HV1-4, 6, 12, 16-17, 20 |  |
|   |   |   | Air conditioner (>135-240 kBtuh)   | 11.0 EER/11.5 IPLV          | HV1-4, 6, 12, 16-17, 20 |  |
|   |   |   | Air conditioner (>240 kBtuh)   | 10.6 EER/11.2 IPLV          | HV1-4, 6, 12, 16-17, 20 |  |
|   |   |   | Gas furnace (0-225 kBtuh - SP)   | 80% AFUE or E <sub>t</sub>  | HV1-3, 6, 16, 20        |  |
| Gas furnace (0-225 kBtuh - Split)         |   |   | 80% AFUE or E <sub>t</sub>   | HV1-3, 6, 16, 20            |                         |  |
| Gas furnace (>225 kBtuh)                  |   |   | 80% E <sub>c</sub>   | HV1-3, 6, 16, 20            |                         |  |
| Heat pump (0-65 kBtuh)                    |   |   | 13.0 SEER/7.7 HSPF   | HV1-4, 6, 12, 16-17, 20     |                         |  |
| Heat pump (>65-135 kBtuh)                 |   |   | 10.6 EER/11.0 IPLV/3.2 COP   | HV1-4, 6, 12, 16-17, 20     |                         |  |
| Heat pump (>135 kBtuh)                    |   | 10.1 EER/11.5 IPLV/3.1 COP  | HV1-4, 6, 12, 16-17, 20  |                             |                         |  |
| Economizer                                |   | Air conditioners & heat pumps- SP   | No recommendation  | HV23                        |                         |  |
| Ventilation                               |   | Outdoor air damper  | Motorized control  | HV7-8                       |                         |  |
|   |   | Demand control  | CO <sub>2</sub> sensors  | HV7, 22                     |                         |  |
| Ducts                                     | Friction rate   | 0.08 in. w.c./100 ft  | HV9, 18  |                             |                         |  |
|   | Sealing   | Seal class B  | HV11   |                             |                         |  |
|   | Location  | Interior only   | HV9  |                             |                         |  |
|   | Insulation level                                      | R-6   | HV10   |                             |                         |  |
| SWH                                       | Service<br>Water<br>Heating                           | Gas storage (> 75 kBtuh)  | 90% E <sub>t</sub>   | WH1-4                       |                         |  |
|   |   | Gas Instantaneous   | 0.81 EF or 81% E <sub>t</sub>  | WH1-4                       |                         |  |
|   |   | Electric storage (≤ 12 kW and > 20 gal)   | EF > 0.99 – 0.0012xVolume  | WH1-4                       |                         |  |
|   |   | Pipe insulation (d < 1½ in./ d ≥ 1½ in.)  | 1 in./ 1½ in.  | WH6                         |                         |  |

**Note:** If the table contains “No recommendation” for a component, the user must meet the more stringent of either Standard 90.1 or the local code requirements in order to reach the 30% savings target.



# Zone 2

## Alabama

Baldwin  
Mobile

## Arizona

La Paz  
Maricopa  
Pima  
Pinal  
Yuma

## California

Imperial

## Florida

Alachua  
Baker  
Bay  
Bradford  
Brevard  
Calhoun  
Charlotte  
Citrus  
Clay  
Collier  
Columbia  
DeSoto  
Dixie  
Duval  
Escambia  
Flagler  
Franklin  
Gadsden  
Gilchrist  
Glades  
Gulf  
Hamilton  
Hardee  
Hendry  
Hernando  
Highlands  
Hillsborough  
Holmes  
Indian River  
Jackson  
Jefferson  
Lafayette  
Lake  
Lee  
Leon

Levy  
Liberty  
Madison  
Manatee  
Marion  
Martin  
Nassau  
Okaloosa  
Okeechobee  
Orange  
Osceola  
Palm Beach  
Pasco  
Pinellas  
Polk  
Putnam  
Santa Rosa  
Sarasota  
Seminole  
St. Johns  
St. Lucie  
Sumter  
Suwannee  
Taylor  
Union  
Volusia  
Wakulla  
Walton  
Washington

## Georgia

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

## Louisiana

Acadia  
Allen  
Ascension  
Assumption  
Avoyelles  
Beauregard  
Cameron  
East Baton  
Rouge  
East Feliciana  
Evangeline  
Iberia  
Iberville  
Jefferson  
Jefferson Davis  
Lafayette  
Lafourche  
Livingston  
Orleans  
Plaquemines  
Pointe Coupee  
Rapides  
St. Bernard  
St. Charles  
St. Helena  
St. James  
St. John the Baptist  
St. Landry  
St. Martin  
St. Mary  
St. Tammany  
Tangipahoa  
Terrebonne  
Vermilion  
Washington  
West Baton  
Rouge

West Feliciana

## Mississippi

Hancock  
Harrison  
Jackson  
Pearl River  
Stone

## Texas

Anderson  
Angelina  
Aransas  
Atascosa  
Austin  
Bandera  
Bastrop  
Bee  
Bell  
Bexar  
Bosque  
Brazoria  
Brazos  
Brooks  
Burleson  
Caldwell  
Calhoun  
Cameron  
Chambers  
Cherokee  
Colorado  
Cornal  
Coryell  
DeWitt  
Dimmit  
Duval  
Edwards  
Falls  
Fayette  
Fort Bend  
Freestone  
Frio  
Galveston  
Goliad  
Gonzales  
Grimes  
Guadalupe  
Hardin  
Harris  
Hays  
Hidalgo  
Hill

Houston  
Jackson  
Jasper  
Jefferson  
Jim Hogg  
Jim Wells  
Karnes  
Kenedy  
Kinney  
Kleberg  
La Salle  
Lavaca  
Lee  
Leon  
Liberty  
Limestone  
Live Oak  
Madison  
Matagorda  
Maverick  
McLennan  
McMullen  
Medina  
Milam  
Montgomery  
Newton  
Nueces  
Orange  
Polk  
Real  
Refugio  
Robertson  
San Jacinto  
San Patricio  
Starr  
Travis  
Trinity  
Tyler  
Uvalde  
Val Verde  
Victoria  
Walker  
Waller  
Washington  
Webb  
Wharton  
Willacy  
Williamson  
Wilson  
Zapata  
Zavala