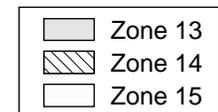
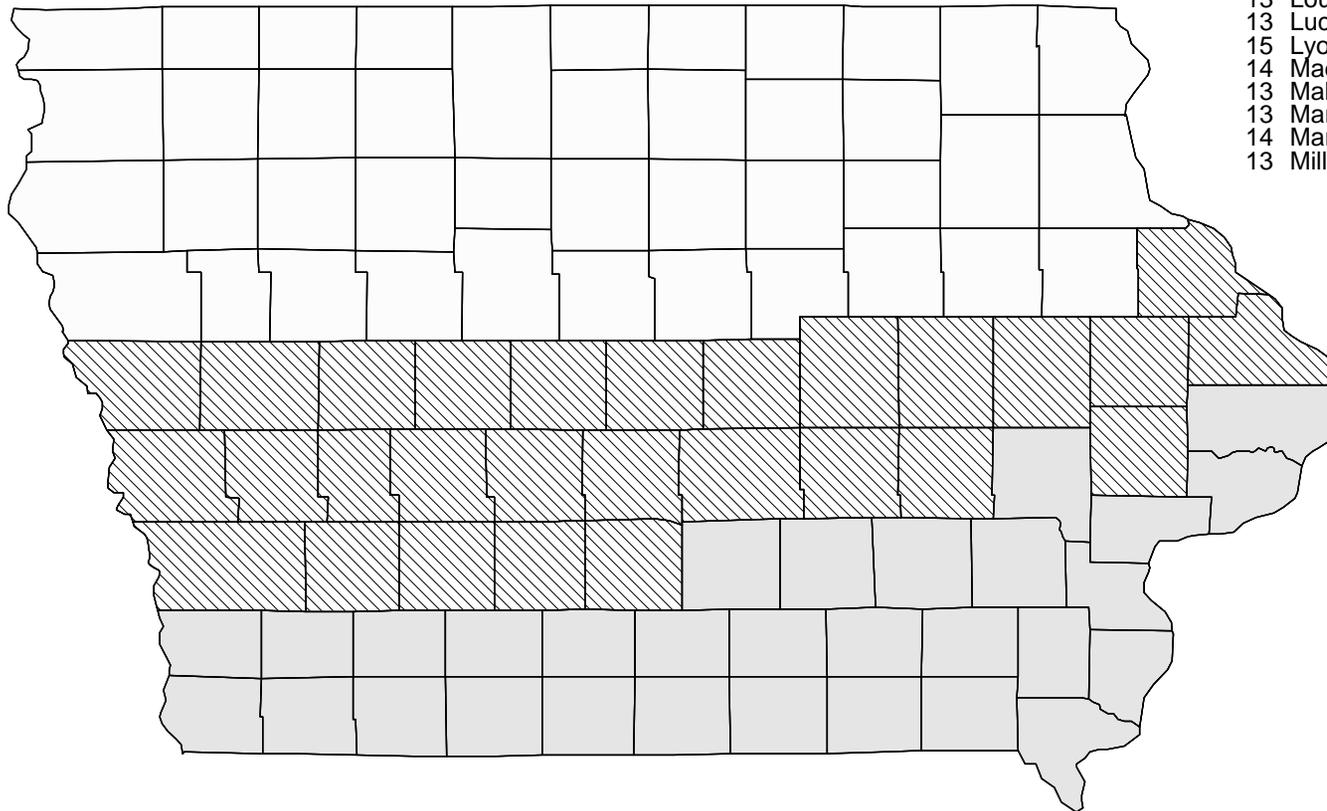


# IOWA

Zone County	Zone County	Zone County	Zone County	Zone County	Zone County	Zone County	Zone County
14 Adair	15 Bremer	15 Cerro Gordo	14 Dallas	15 Fayette	15 Hancock	14 Jackson	15 Mitchell
13 Adams	15 Buchanan	15 Cherokee	13 Davis	15 Floyd	15 Hardin	14 Jasper	14 Monona
15 Allamakee	15 Buena Vista	15 Chickasaw	13 Decatur	15 Franklin	14 Harrison	13 Jefferson	13 Monroe
13 Appanoose	15 Butler	13 Clarke	15 Delaware	13 Fremont	13 Henry	13 Johnson	13 Montgomery
14 Audubon	15 Calhoun	15 Clay	13 Des Moines	14 Greene	15 Howard	14 Jones	13 Muscatine
14 Benton	14 Carroll	15 Clayton	15 Dickinson	15 Grundy	15 Humboldt	13 Keokuk	15 O'Brien
15 Black Hawk	14 Cass	13 Clinton	14 Dubuque	14 Guthrie	15 Ida	15 Kossuth	15 Osceola
14 Boone	14 Cedar	14 Crawford	15 Emmet	15 Hamilton	14 Iowa	13 Lee	13 Page
						14 Linn	15 Palo Alto
						13 Louisa	15 Plymouth
						13 Lucas	15 Pocahontas
						15 Lyon	14 Polk
						14 Madison	14 Pottawattamie
						13 Mahaska	14 Poweshiek
						13 Marion	14 Ringgold
						14 Marshall	15 Sac
						13 Mills	13 Scott
							14 Shelby
							15 Sioux
							14 Story
							14 Tama
							13 Taylor
							13 Union
							13 Van Buren
							13 Wapello
							14 Warren
							13 Washington
							13 Wayne
							15 Webster
							15 Winnebago
							15 Winneshiek
							15 Woodbury
							15 Worth
							15 Wright



# Prescriptive Packages - Zone 13

1993 Model Energy Code for Single-Family Buildings



Package	MAXIMUM		MINIMUM						Heating/Cooling Equipment Efficiency <sup>9</sup>
	Glazing Area Percent <sup>1</sup>	Glazing U-Value <sup>2</sup>	Ceiling R-Value <sup>3</sup>	Wall R-Value <sup>4</sup>	Floor R-Value <sup>5</sup>	Basement Wall R-Value <sup>6</sup>	Slab Perimeter R-Value <sup>7</sup>	Crawl Space Wall R-Value <sup>8</sup>	
1	12%	0.45	R-38	R-19	R-19	R-10	R-7	R-16	Normal
2	15%	0.40	R-38	R-19	R-26	R-11	R-12	R-22	Normal
3	15%	0.35	R-38	R-19	R-19	R-9	R-5	R-14	Normal
4	18%	0.35	R-38	R-19	R-26	R-11	R-15	R-26	Normal
5	18%	0.35	R-49	R-19	R-21	R-10	R-9	R-19	Normal
6	22%	0.35	R-49	R-21	R-30	R-14	--	--	Normal
7	12%	0.65	R-38	R-15	R-19	R-9	R-3	R-18	High Heating
8	12%	0.55	R-30	R-13	R-19	R-8	R-2	R-16	High Heating
9	15%	0.60	R-38	R-19	R-19	R-8	R-2	R-17	High Heating
10	15%	0.45	R-30	R-13	R-19	R-8	R-2	R-16	High Heating
11	18%	0.50	R-38	R-19	R-19	R-8	R-2	R-16	High Heating
12	18%	0.40	R-30	R-13	R-19	R-8	R-3	R-18	High Heating
13	22%	0.40	R-38	R-15	R-21	R-10	R-4	R-24	High Heating
14	12%	0.75	R-38	R-19	R-19	R-8	R-2	R-16	High Heat/Cool
15	12%	0.60	R-30	R-13	R-19	R-9	R-3	R-20	High Heat/Cool
16	15%	0.65	R-38	R-19	R-21	R-9	R-4	R-24	High Heat/Cool
17	15%	0.50	R-30	R-13	R-19	R-9	R-4	R-22	High Heat/Cool
18	18%	0.55	R-38	R-19	R-21	R-9	R-4	R-24	High Heat/Cool
19	18%	0.40	R-30	R-13	R-19	R-8	R-2	R-16	High Heat/Cool
20	22%	0.45	R-49	R-19	R-19	R-8	R-2	R-17	High Heat/Cool
21	22%	0.40	R-38	R-15	R-19	R-9	R-3	R-22	High Heat/Cool

-- Hyphens (--) indicate that the package which contains the hyphens cannot be used with the indicated foundation type (slab or crawl space).

# Prescriptive Packages - Zone 14

1993 Model Energy Code for Single-Family Buildings



Package	MAXIMUM		MINIMUM						Heating/Cooling Equipment Efficiency <sup>9</sup>
	Glazing Area Percent <sup>1</sup>	Glazing U-Value <sup>2</sup>	Ceiling R-Value <sup>3</sup>	Wall R-Value <sup>4</sup>	Floor R-Value <sup>5</sup>	Basement Wall R-Value <sup>6</sup>	Slab Perimeter R-Value <sup>7</sup>	Crawl Space Wall R-Value <sup>8</sup>	
1	12%	0.45	R-38	R-19	R-26	R-12	--	R-28	Normal
2	12%	0.35	R-38	R-19	R-19	R-9	R-4	R-13	Normal
3	15%	0.40	R-38	R-19	R-30	R-14	--	--	Normal
4	15%	0.35	R-38	R-19	R-26	R-11	R-13	R-22	Normal
5	15%	0.35	R-49	R-19	R-21	R-10	R-8	R-18	Normal
6	18%	0.35	R-38	R-20	R-30	R-14	--	--	Normal
7	18%	0.35	R-49	R-19	R-30	R-13	--	--	Normal
8	12%	0.70	R-38	R-19	R-19	R-9	R-4	R-22	High Heating
9	12%	0.50	R-30	R-13	R-19	R-9	R-3	R-19	High Heating
10	15%	0.45	R-38	R-15	R-19	R-8	R-2	R-15	High Heating
11	15%	0.40	R-30	R-13	R-19	R-8	R-3	R-17	High Heating
12	18%	0.50	R-38	R-19	R-21	R-10	R-6	R-28	High Heating
13	18%	0.35	R-30	R-13	R-19	R-9	R-3	R-18	High Heating
14	22%	0.40	R-38	R-19	R-19	R-9	R-4	R-22	High Heating
15	12%	0.60	R-38	R-15	R-19	R-9	R-3	R-20	High Heat/Cool
16	15%	0.60	R-38	R-19	R-21	R-10	R-5	R-28	High Heat/Cool
17	15%	0.45	R-30	R-13	R-21	R-10	R-5	R-26	High Heat/Cool
18	18%	0.50	R-38	R-19	R-21	R-10	R-5	R-26	High Heat/Cool
19	18%	0.40	R-30	R-15	R-19	R-9	R-4	R-22	High Heat/Cool
20	22%	0.45	R-49	R-19	R-26	R-11	R-7	--	High Heat/Cool

-- Hyphens (--) indicate that the package which contains the hyphens cannot be used with the indicated foundation type (slab or crawl space).

# Prescriptive Packages - Zone 15

1993 Model Energy Code for Single-Family Buildings



Package	MAXIMUM		MINIMUM						Heating/Cooling Equipment Efficiency <sup>9</sup>
	Glazing Area Percent <sup>1</sup>	Glazing U-Value <sup>2</sup>	Ceiling R-Value <sup>3</sup>	Wall R-Value <sup>4</sup>	Floor R-Value <sup>5</sup>	Basement Wall R-Value <sup>6</sup>	Slab Perimeter R-Value <sup>7</sup>	Crawl Space Wall R-Value <sup>8</sup>	
1	12%	0.45	R-38	R-19	R-26	R-13	--	R-30	Normal
2	12%	0.35	R-38	R-19	R-19	R-9	R-5	R-14	Normal
3	15%	0.40	R-38	R-19	R-30	R-15	--	--	Normal
4	15%	0.35	R-38	R-19	R-26	R-12	R-18	R-24	Normal
5	18%	0.35	R-38	R-21	R-30	R-15	--	--	Normal
6	12%	0.55	R-38	R-15	R-19	R-8	R-2	R-15	High Heating
7	15%	0.55	R-38	R-19	R-19	R-9	R-3	R-18	High Heating
8	18%	0.50	R-38	R-19	R-21	R-11	R-7	R-28	High Heating
9	22%	0.45	R-38	R-19	R-30	R-13	R-18	--	High Heating
10	22%	0.40	R-49	R-19	R-19	R-9	R-3	R-17	High Heating
11	12%	0.60	R-38	R-15	R-19	R-9	R-4	R-20	High Heat/Cool
12	15%	0.60	R-38	R-19	R-21	R-11	R-7	R-30	High Heat/Cool
13	15%	0.50	R-49	R-15	R-19	R-9	R-3	R-18	High Heat/Cool
14	18%	0.50	R-49	R-15	R-30	R-13	R-16	--	High Heat/Cool
15	22%	0.45	R-38	R-19	R-26	R-13	R-14	--	High Heat/Cool

-- Hyphens (--) indicate that the package which contains the hyphens cannot be used with the indicated foundation type (slab or crawl space).

# Prescriptive Packages - Zone 13

1993 Model Energy Code for Multifamily Buildings



Package	MAXIMUM		MINIMUM						Heating/Cooling Equipment Efficiency <sup>9</sup>
	Glazing Area Percent <sup>1</sup>	Glazing U-Value <sup>2</sup>	Ceiling R-Value <sup>3</sup>	Wall R-Value <sup>4</sup>	Floor R-Value <sup>5</sup>	Basement Wall R-Value <sup>6</sup>	Slab Perimeter R-Value <sup>7</sup>	Crawl Space Wall R-Value <sup>8</sup>	
1	15%	0.60	R-30	R-14	R-11	R-5	R-0	R-6	Normal
2	15%	0.50	R-19	R-13	R-11	R-5	R-0	R-6	Normal
3	20%	0.55	R-38	R-14	R-15	R-8	R-2	R-10	Normal
4	20%	0.45	R-30	R-13	R-11	R-5	R-0	R-6	Normal
5	25%	0.50	R-38	R-19	R-15	R-8	R-2	R-10	Normal
6	25%	0.40	R-30	R-13	R-13	R-6	R-2	R-7	Normal
7	30%	0.40	R-38	R-13	R-19	R-9	R-5	R-15	Normal
8	15%	0.75	R-13	R-13	R-11	R-5	R-0	R-6	High Heating
9	20%	0.70	R-26	R-13	R-11	R-5	R-0	R-6	High Heating
10	20%	0.55	R-13	R-11	R-11	R-5	R-0	R-6	High Heating
11	25%	0.60	R-30	R-13	R-11	R-5	R-0	R-7	High Heating
12	25%	0.55	R-19	R-13	R-11	R-5	R-0	R-7	High Heating
13	30%	0.55	R-38	R-13	R-13	R-7	R-2	R-11	High Heating
14	30%	0.50	R-26	R-13	R-11	R-5	R-0	R-7	High Heating

# Prescriptive Packages - Zone 14

1993 Model Energy Code for Multifamily Buildings



Package	MAXIMUM		MINIMUM						Heating/Cooling Equipment Efficiency <sup>9</sup>
	Glazing Area Percent <sup>1</sup>	Glazing U-Value <sup>2</sup>	Ceiling R-Value <sup>3</sup>	Wall R-Value <sup>4</sup>	Floor R-Value <sup>5</sup>	Basement Wall R-Value <sup>6</sup>	Slab Perimeter R-Value <sup>7</sup>	Crawl Space Wall R-Value <sup>8</sup>	
1	15%	0.50	R-38	R-13	R-11	R-5	R-0	R-6	Normal
2	15%	0.55	R-30	R-14	R-13	R-7	R-2	R-8	Normal
3	20%	0.50	R-38	R-13	R-19	R-10	R-7	R-17	Normal
4	20%	0.45	R-30	R-14	R-15	R-8	R-2	R-10	Normal
5	25%	0.45	R-49	R-18	R-15	R-8	R-3	R-11	Normal
6	25%	0.40	R-30	R-14	R-19	R-9	R-6	R-15	Normal
7	30%	0.35	R-38	R-13	R-19	R-9	R-6	R-15	Normal
8	15%	0.75	R-26	R-11	R-11	R-5	R-0	R-6	High Heating
9	15%	0.70	R-19	R-11	R-11	R-5	R-0	R-7	High Heating
10	20%	0.65	R-30	R-13	R-11	R-6	R-2	R-8	High Heating
11	20%	0.60	R-26	R-11	R-11	R-6	R-0	R-7	High Heating
12	20%	0.55	R-19	R-11	R-11	R-5	R-0	R-7	High Heating
13	25%	0.60	R-38	R-11	R-19	R-10	R-5	R-26	High Heating
14	25%	0.55	R-30	R-13	R-13	R-6	R-2	R-9	High Heating
15	25%	0.50	R-19	R-15	R-11	R-6	R-0	R-8	High Heating
16	30%	0.55	R-38	R-19	R-15	R-8	R-2	R-14	High Heating
17	30%	0.45	R-30	R-13	R-11	R-5	R-0	R-7	High Heating

# Prescriptive Packages - Zone 15

1993 Model Energy Code for Multifamily Buildings



Package	MAXIMUM		MINIMUM						Heating/Cooling Equipment Efficiency <sup>9</sup>
	Glazing Area Percent <sup>1</sup>	Glazing U-Value <sup>2</sup>	Ceiling R-Value <sup>3</sup>	Wall R-Value <sup>4</sup>	Floor R-Value <sup>5</sup>	Basement Wall R-Value <sup>6</sup>	Slab Perimeter R-Value <sup>7</sup>	Crawl Space Wall R-Value <sup>8</sup>	
1	12%	0.45	R-30	R-13	R-19	R-11	R-9	R-18	Normal
2	12%	0.55	R-38	R-18	R-15	R-8	R-3	R-11	Normal
3	15%	0.45	R-49	R-14	R-21	R-11	R-12	R-20	Normal
4	15%	0.40	R-38	R-13	R-19	R-11	R-9	R-18	Normal
5	20%	0.40	R-49	R-18	R-19	R-10	R-9	R-17	Normal
6	20%	0.35	R-38	R-19	R-15	R-8	R-2	R-10	Normal
7	25%	0.35	R-49	R-20	R-21	R-12	R-15	R-22	Normal
8	25%	0.30	R-49	R-18	R-15	R-8	R-3	R-11	Normal
9	30%	0.30	R-49	R-23	R-19	R-11	R-9	R-18	Normal
10	12%	0.75	R-30	R-13	R-13	R-8	R-2	R-11	High Heating
11	12%	0.65	R-38	R-11	R-11	R-6	R-0	R-7	High Heating
12	15%	0.60	R-38	R-13	R-13	R-6	R-2	R-9	High Heating
13	15%	0.50	R-30	R-11	R-11	R-6	R-0	R-7	High Heating
14	15%	0.45	R-19	R-13	R-11	R-5	R-0	R-6	High Heating
15	20%	0.60	R-49	R-19	R-15	R-8	R-2	R-14	High Heating
16	20%	0.50	R-38	R-13	R-15	R-8	R-2	R-13	High Heating
17	25%	0.50	R-49	R-16	R-19	R-11	R-6	R-28	High Heating
18	25%	0.40	R-38	R-13	R-13	R-7	R-2	R-10	High Heating
19	30%	0.40	R-49	R-19	R-13	R-7	R-2	R-11	High Heating
20	30%	0.35	R-38	R-16	R-11	R-6	R-2	R-7	High Heating

## FOOTNOTES:

- <sup>1</sup> Glazing area is the ratio of the area of the glazing assemblies (including sliding-glass doors, skylights, and basement windows but excluding opaque doors) to the gross wall area, expressed as a percentage. Up to 1% of the total glazing area may be excluded from the U-value requirement. For example, 3 ft<sup>2</sup> of decorative glass may be excluded from a building design with 300 ft<sup>2</sup> of glazing area.
- <sup>2</sup> Glazing U-values should be tested and documented by the manufacturer in accordance with the National Fenestration Rating Council (NFRC) test procedure, taken from the glazing U-value table in Appendix B, or derived from an alternate test procedure or table accepted by your local jurisdiction. Center-of-glass U-values cannot be used.
- <sup>3</sup> The ceiling R-values do not assume a raised or oversized truss construction. If the insulation achieves the full insulation thickness over the exterior walls, R-30 insulation may be substituted for R-38 insulation and R-38 insulation may be substituted for R-49 insulation. Ceiling R-values represent the sum of cavity insulation plus insulating sheathing (if used). For ventilated ceilings, insulating sheathing must be placed between the conditioned space and the ventilated portion of the roof.
- <sup>4</sup> Wall R-values represent the sum of the wall cavity insulation plus insulating sheathing (if used). Do not include exterior siding, structural sheathing, and interior drywall. For example, an R-19 requirement could be met *EITHER* by R-19 cavity insulation *OR* R-13 cavity insulation plus R-6 insulating sheathing. Wall requirements apply to wood-frame or mass (concrete, masonry, log) wall constructions, but do not apply to metal-frame construction. Metal-frame wall equivalent R-values can be found in Appendix C.
- <sup>5</sup> The floor requirements apply to floors over unconditioned spaces (such as unconditioned crawlspaces, basements, or garages). Floors over outside air must meet the ceiling requirements.
- <sup>6</sup> Walls of conditioned basements below uninsulated floors must be insulated from the top of the basement wall to a depth of 10 ft below ground level or to the level of the basement floor, whichever is less. The entire opaque portion of basement walls with an average depth less than 50% below grade must meet the same R-value requirement as above-grade walls. Conditioned basement windows and sliding glass doors must be included with the other glazing. Basement doors must meet the door U-value requirement described in Note b.
- <sup>7</sup> The R-value requirements are for unheated slabs. Add an additional R-2 for heated slabs, except in Zone 1 which does not require slab insulation. For packages with a slab insulation requirement, the insulation must extend a total linear distance of at least 24 in. in Zones 2-12 and 48 in. in Zones 13-17. The insulation must extend  
1) down from the top of the slab, or  
2) down from the top of the slab to the bottom of the slab and then horizontally underneath the slab, or  
3) down from the top of the slab to the bottom of the slab and then horizontally away from the slab, with pavement or at least 10 in. of soil covering the horizontal insulation.
- <sup>8</sup> The crawl space wall R-value requirements are for walls of unventilated crawl spaces. The crawl space wall insulation must extend from the top of the wall (including the sill plate) to at least 12 in. below the outside finished grade. If the distance from the outside finished grade to the top of the footing is less than 12 in., the insulation must extend a total vertical plus horizontal distance of 24 in. from the outside finished grade.
- <sup>9</sup> *High Heating* means a furnace AFUE of 90% or more, or a heat pump HSPF of 7.8 or more. *High Cooling* means a SEER of 12 or more. *High Heat/Cool* means both heating and cooling equipment must meet these minimum efficiencies. If you plan to install more than one piece of heating equipment or more than one piece of cooling equipment, the equipment with the lowest efficiency must meet or exceed the efficiency required by the selected package. The following California counties do not qualify for the cooling equipment credit: Alameda, Contra Costa, Los Angeles, Marin, Monterey, Napa, Orange, San Benito, San Diego, San Francisco, San Luis Obispo, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, Solano, Sonoma, and Ventura.

## NOTES:

- a) Glazing areas and U-values are maximum acceptable levels. Insulation R-values are minimum acceptable levels. R-value requirements are for insulation only and do not include structural components.
- b) Opaque doors in the building envelope must have a U-value no greater than 0.35. Door U-values must be based on manufacturer data, taken from the door U-value table in Appendix B, or derived from an alternate test procedure or table accepted by your jurisdiction. If a door contains glass and an aggregate U-value rating for that door is not available, include the glass area of the door with your windows and use the opaque door U-value to determine compliance of the door. One door may be excluded from this requirement (i.e., may have a U-value greater than 0.35).
- c) If a ceiling, wall, floor, basement wall, slab-edge, or crawl space wall component includes two or more areas with different insulation levels, the component complies if the area-weighted average R-value is greater than or equal to the R-value requirement for that component. Glazing or door components comply if the area-weighted average U-value of all windows or doors is less than or equal to the U-value requirement (0.35 for doors). Use the *R-Value/U-Value Weighted Average Worksheet* for these computations.