RESIDENTIAL CHECKLIST
IECC 2018 with Honolulu Amendments

HAWAIʻI STATE ENERGY OFFICE

Hawaii Energy
YOUR CONSERVATION & EFFICIENCY PROGRAM

This checklist covers requirements of the Honolulu Energy Conservation Code, approved August 2023 and effective November 23, 2023. This code is an amended version of the 2018 International Energy Conservation Code (IECC), with Honolulu amendments applied to the State amended version (December 15, 2020).

- State amendments: https://energy.hawaii.gov/hawaii-building-energy-code/
- Subsequent Honolulu amendments: https://www.resilientoahu.org/energycode
- View the 2018 IECC here: https://codes.iccsafe.org/content/iecc2018

Red text in this checklist indicates changes compared to the IECC with State amendments

SCOPE

Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) as well as Group R-2, R-3 and R-4 buildings three stories or less in height above grade plane. The code applies to new construction, additions and alterations. See a separate Commercial Checklist for high-rise residential and commercial buildings.

RESIDENTIAL COMPLIANCE OPTIONS

Tropical Zone	Prescriptive	Simulated Performance Alternative	Energy Rating Index Compliance Alternative	Large Single Family Homes
Allowed when: 1. ≤50% air conditioned, 2. not heated, and 3. elevation < 2,400 feet.	Include three options for walls and roof compliance: 1. Prescriptive 2. Total UA (typically with ResCheck software) 3. Points option (added by Hawaii amendment) Envelope requirements apply to unconditioned occupiable space (Honolulu amendments, R402.1)	Simulated energy performance analysis for heating, cooling and water heating. Proposed design must have annual energy cost less than or equal to energy cost of reference design.	Third-party Home Energy Rating System (HERS) calculation. Allows the designer to pick and choose from many efficiency options. Scores range from 100 to 0. The 100 score indicates compliance with the 2006 IECC. Each efficiency measure beyond 2006 lowers the score. A passing score for Climate Zone 1 is 57.	Required if > 7,000 ft^2 and ≥2,000 ft^2 conditioned space Comply with: ▪ Simulated performance alternative, or ▪ Energy rating index alternative Meet additional efficiency requirements
See Tropical Zone Checklist below	See Prescriptive Checklist below. See Points Option tables below.	See code Section R405	See code Section R406	See Large Single Family Home checklist below
PV and EV ready Solar conduit and electrical panel readiness (R408.1) Electric vehicle readiness (R408.2)				

CHECKLIST CONTENTS

Sponsor: Hawaii State Energy Office
Acknowledgment: This material is based upon work supported by the Department of Energy under Award Number SE0000134.

TROPICAL ZONE REQUIREMENTS CHECKLIST

Component/System	Requirement	Code Section	Plan Review Notes	Info on Plans
Design professional statement	Form included on plans with signature of design professional	R103.1† R103.2†	See the Honolulu amendments for required format.	☐ Signature block included
Tropical zone qualification	▪ ≤ 50% of the dwelling unit has AC ▪ No heating installed ▪ Elevation < 2,400 ft	R401.2.1*	Dwellings that do not meet all these criteria must use another compliance option.	☐ AC space clearly indicated (if applicable)
Certificate	Permanent certificate	R401.4†	Posted on a wall in approved location. Includes insulation R-values, window SHGC, results of duct and air leakage testing (if required), efficiency of air conditioning and water heating equipment, PV system information (if applicable), Energy Rating Index score (if applicable) Section is renumbered by Honolulu amendment.	
Water heating - solar	Solar, wind or other renewable source supplies ≥ 90% of energy for water heating	R401.2.1*	HRS 196-6.5: https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0196/HRS_0196-0006_0005.htm HSEO guidance: https://energy.hawaii.gov/what-we-do/energy-efficiency/solar-water-heat-variance	☐ Water heating system specs on plans
Windows – solar heat gain coefficient (SHGC)	≤ **0.25** if projection factor < 0.30 ≤ **0.40** if projection factor 0.30-0.50 N/A: projection factor ≥ 0.50 N/A: north windows if PF > 0.20 Jalousie windows exempt.	R401.2.1*	SHGC = solar heat gain factor. Low SHGC typically requires dual-pane glazing with a low-emittance coating that is designed to reduce solar heat gain. Projection factor = horizontal projection of overhang ÷ vertical distance from overhang to bottom of window. Overhang must extend at least 2 ft on each side of the window or to the nearest wall, whichever is less.	☐ SHGC indicated on plans ☐ Overhang dimensions on plans, if applicable
Skylights – U-factor	≤ **0.75**	R401.2.1*	Skylights must have dual-pane glazing.	☐ Skylight U-factor on plans
Lighting	≥ 90% of lamps or fixtures are high efficacy	R202† R404.1*	The definition of high efficacy lamps is modified in Honolulu amendments: *"High-efficacy lighting means an efficacy of not less than 70 lumens per watt for lamps and 55 lumens per watt for fixtures."* Most, but not all, LED lamps will qualify. Applies to permanently-installed fixtures. Low-voltage lighting is exempt.	☐ Lighting fixture locations on plans ☐ Lighting fixture schedule includes input power and lumen output

Component/System	Requirement	Code Section	Plan Review Notes	Info on Plans
Roof – insulation and membrane	☐ **R-13** + cool roof, ☐ **R-19**, or ☐ *Points option (section R407)*	R401.2.1*	Qualifying cool roof membranes must meet one of the following (per Table C402.3): 1. Aged reflectance ≥ 0.55 & aged thermal emittance ≥ 0.75 2. Aged solar reflectance index (SRI) ≥ 0.64 Qualifying cool roofs will typically be white in color. Typical options include white painted metal, white tile, white liquid applied coating, and white single-ply membranes. If present, attics above insulation must be vented and attics below insulation must be unvented.	☐ Insulation location on plans ☐ Insulation R-value on plans ☐ Membrane specs on plans (if applicable
Roof – slope	≥ ¼ in. per foot	R401.2.1*	No water accumulation areas allowed.	☐ Roof slope indicated on plans
Walls and floor	No requirement			
Natural ventilation	▪ Opening area ≥ 14% of floor area in each room (or provide a ventilation fan) ▪ Bedrooms with exterior walls facing two different directions have operable fenestration facing two directions ▪ Interior doors to bedrooms capable of being secured open	R401.2.1*	Operable windows and/or skylights are required for natural ventilation. Ventilation fans can be provided as an alternative.	☐ Operable openings on plans ☐ Ventilation fans on plans (if applicable)
Ceiling fans	Ceiling fans or rough-ins required for: ▪ Each bedroom ▪ Largest space not used as a bedroom	R401.2.1*	A "rough-in" is an electrical junction box mounted in the ceiling that is rated for ceiling fan installation.	☐ Ceiling fan locations on plans
Air leakage	Walls, floor and ceilings that separate AC spaces and non-AC spaces use air-tight construction	R401.2.1*	For air conditioned spaces, see section R402.4: ▪ Continuous air barrier ▪ Breaks or joints are sealed ▪ Recessed lighting ▪ Fenestration air leakage	☐ Plan notes indicate installation requirements
Solar conduit and electrical panel readiness	See prescriptive checklist	R408†		
Electric vehicle readiness	See prescriptive checklist	R408†		

* Code section added or modified by State amendment

† Code section added or modified by Honolulu amendment

END OF TROPICAL ZONE CHECKLIST

PRESCRIPTIVE REQUIREMENTS CHECKLIST

Component/System	Requirement	Code Section	Plan Review Notes	Info on Plans
Design professional statement	Form included on plans with signature of design professional	R103.1† R103.2†	See the Honolulu amendments for required format.	☐ Signature block included
Certificate	Permanent certificate	R401.4†	Posted on a wall in approved location. Includes insulation R-values, window SHGC, results of duct and air leakage testing (if required), efficiency of air conditioning and water heating equipment, PV system information (if applicable), Energy Rating Index score (if applicable) Section is renumbered by Honolulu amendment.	
Roof – wood frame	☐ **R-30**, ☐ **U-0.035**, ☐ Total UA alternative, or ☐ Points option	R402.1, R402.1.5, R407*	Some R-30 options: • 10 in. batt insulation • 5 to 8 in. spray foam	☐ Insulation location on plans ☐ Insulation R-value on plans
Roof – metal truss	☐ **R-38**, ☐ **U-0.035**, ☐ **R-30** + **R-3**, ☐ **R-26** + **R-5,** ☐ *Total UA alternative*, or ☐ *Points option*	R402.1, R402.2, R402.1.5, R407*	Metal frame creates a thermal bridge, and more insulation is required. “R-3” and R-5” refer to continuous insulation, typically foam board.	☐ Insulation location on plans ☐ Insulation R-value on plans
Roof – metal joist	☐ **R-38** in 2x4, 2x6 or 2x8 framing, ☐ **R-49** in any framing ☐ *Total UA alternative*, or ☐ *Points option*	R402.1, R402.2, R402.1.5, R407*		☐ Insulation location on plans ☐ Insulation R-value on plans
Wall – wood frame	☐ **R-13**, ☐ **U-0.084**, ☐ *Total UA alternative*, or ☐ *Points option*	R402.1, R402.1.5, R407*	Some R-13 options: • 3.5 in. batt insulation • 2 to 3.5 in. spray foam	☐ Insulation location on plans ☐ Insulation R-value on plans
Wall – metal frame	Framing 16 in. on center: ☐ **R-13** + **R-4.2** ☐ **R-21** + **R-2.8** Framing 24 in. on center: ☐ **R-13** + **R-3.0** ☐ **R-15** + **R-2.4** ☐ *Total UA alternative*, or ☐ *Points option*	R402.1, R402.2, R402.1.5, R402.2.6, R407*	Requires insulation in framing cavity plus a layer of continuous insulation (typically foam board). Other complying combinations of batt and board insulation are listed in Table R402.2.6 in the 2018 IECC	☐ Insulation location on plans ☐ Insulation R-value on plans

Component/System	Requirement	Code Section	Plan Review Notes	Info on Plans
Wall – mass (CMU or concrete)	☐ **R-3** exterior, ☐ **R-4** interior, ☐ **U-0.197**, ☐ Exterior reflectance ≥**0.64**, ☐ Overhang projection factor ≥**0.3**, ☐ Mass wall thickness ≥ **6** inches + unpainted finish with or without clear sealer, ☐ *Total UA alternative*, or ☐ *Points option*	R402.1†	Requires either exterior or interior insulation, typically foam board. CMU integral insulation does not comply. Honolulu amendments add several alternatives. The Honolulu amendments add a definition: *LIGHT REFLECTANCE VALUE means the amount of visible light that reflects from a surface expressed as a percentage, where zero means a surface absorbs all light and 100 means a surface reflects all light*.	☐ Insulation location on plans ☐ Insulation R-value on plans (If applicable)
Raised floor – wood or concrete	No requirement	R402.1†	Requirement removed by Honolulu amendment	
Raised floor – metal frame	No requirement	R402.1†	Requirement removed by Honolulu amendment	
Slab-on-grade floor	No requirement			
Windows & skylights	SHGC ≤ **0.25** • Area-weighted average permitted, but maximum SHGC is 0.50 • Up to 15 ft^2 exempt • Jalousie windows are exempt	R402.3* R402.5	SHGC is solar heat gain coefficient. Typically requires dual-pane glazing with a low-emittance coating that is designed to reduce solar heat gain. The 15 ft^2 exemption allows a small amount of clear or unrated glazing.	☐ SHGC indicated on plans
Air leakage – installation	▪ Continuous air barrier ▪ Breaks or joints are sealed ▪ Recessed lighting sealed ▪ Fenestration air leakage	R402.4	▪ Applies to air-conditioned space. ▪ Code includes a list of installation requirements. ▪ Recessed lighting is IC rated and sealed.	☐ Plan notes indicate installation requirements
Air leakage - testing	Leakage ≤ 5 air changes per hour tested at pressure of 0.2 in. w.g. (50 Pascals)	R402.4.1.2 R401.3.1*	▪ Written report required. ▪ Test is typically performed using a blower door. ▪ Sampling of dwellings allowed per State amendment section R401.3.1, following Chapter 6 of RESNET Home Energy Rating System standards.	☐ Plan notes indicate testing requirements
AC controls	Programmable thermostat	R403.1.1		☐ Thermostat included on plans

Component/System	Requirement	Code Section	Plan Review Notes	Info on Plans
Duct insulation	In unconditioned attic: **R-8** for ducts ≥ 3 in. diameter **R-6** for ducts < 3 in. diameter Buried within ceiling insulation: **R-8** duct insulation Vapor retarder ≥**R-13** ceiling insulation above duct Other locations: **R-6** for ducts ≥ 3 in. diameter **R-4.2** for ducts < 3 in. diameter Within building thermal envelope: **No requirements**	R403.3.1 R403.3.6	Applies to both supply and return ducts. Typical insulation thickness: R-8: 3.0 in. duct wrap/flex. R-6: 2.2 in. duct wrap/flex. R-4.2: 1.5 in. duct wrap/flex.	☐ Insulation R-value on plans
Duct testing	Rough-in before air handler installed: ≤ **3 cfm/100 ft²** at 0.1 in. w.g. (25 Pa) Rough-in after air handler installed: ≤ **4cfm/100 ft²** at 0.1 in. w.g. (25 Pa) Postconstruction: ≤ **4cfm/100 ft²** at 0.1 in. w.g. (25 Pa) (No testing required if ducts are located completely within the thermal envelope.)	R403.3.3, R403.3.4 R401.3.1*	Written test report to be delivered to the code official. Test typically performed with a "duct blaster". Sampling of dwellings allowed per State amendment section R401.3.1, following Chapter 6 of RESNET Home Energy Rating System standards.	☐ Plan notes indicate testing requirements
Water heating – circulation systems	Where circulation pumps are used, automatic pump controls required	R403.5.1.1†	Controls for circulating hot water system pumps shall start the pump based on the identification of a demand for hot water within the occupancy. The controls shall automatically turn off the pump when the water in the circulation loop is at the desired temperature and when there is no demand for hot water.	☐ Controls indicated on plans
Water heating – heat trace systems	Where heat trace systems are installed, automatic controls required	R403.5.1.2†	Controls must automatically adjust the energy input to maintain the desired water temperature based on demand schedule.	☐ Controls indicated on plans
Water heating – demand recirculation systems	Control requirements	R403.5.2	This system type starts a pump when receiving a signal from the user or based on flow from a fixture and may recirculate water back through the cold water supply pipe. The controls must stop the pump so that the temperature of the water entering the cold water piping is not greater than 104°F	☐ Controls indicated on plans

Component/System	Requirement	Code Section	Plan Review Notes	Info on Plans
Water heating – pipe insulation	R-3 insulation for all hot water piping, with the following exceptions: 1. under floor slab 2. buried 3. serving only one dwelling unit	R403.5.3†	R-3 pipe insulation is typically ½ in. thick. Locations requiring insulation are modified by Honolulu amendment.	☐ Insulation location on plans ☐ Insulation R-value on plans
Water heating – solar systems	Required for new single-family	R403.5.5*	State amendment to 2018 IECC. Solar water heating required on new single-family homes per existing state law. HRS 196-6.5: https://www.capitol.hawaii.gov/hrscurrent/Vol03_Ch0121-0200D/HRS0196/HRS_0196-0006_0005.htm HSEO guidance: https://energy.hawaii.gov/what-we-do/energy-efficiency/solar-water-heat-variance	
Mechanical ventilation	▪ Provide ventilation that complies with the Housing Code Chapter 16A or other approved means ▪ Automatic or gravity dampers on outdoor air intakes and exhausts	R403.6†		
Ceiling fans	▪ A ceiling fan, ceiling fan rough-in or whole house fan is provided for bedrooms and the largest space that is not used as bedroom. ▪ For production homes, ceiling fan equipment must be provided as a buyer option.	R403.6.2*†	Requirement added by State amendment. Production home requirement added by Honolulu amendment.	☐ Ceiling fan or rough-in locations or whole house fan on plans
Pools and permanent spas	▪ Heaters. Electric power switch required. No gas pilot. ▪ Automatic time switches on heater and pumps. ▪ Covers required for heated pools (except with heat pump or solar). ▪ Comply with APSP-15 standard.	R403.10 R403.12	APSP-15 is a standard for energy efficiency for residential inground swimming pools, and spas.	☐ Controls on plans ☐ Cover on plans

Component/System	Requirement	Code Section	Plan Review Notes	Info on Plans
Lighting	≥ 90% of lamps or fixtures are high efficacy	R202† R404.1*	The definition of high efficacy lamps is modified in the Honolulu amendment: *"High-efficacy lighting means an efficacy of not less than 70 lumens per watt for lamps and 55 lumens per watt for fixtures."* Most, but not all, LED lamps will qualify. Applies to permanently-installed fixtures. Low-voltage lighting is exempt.	☐ Lighting fixture locations on plans ☐ Lighting fixture schedule includes input power and lumen output
Solar conduit and electrical panel readiness	▪ Plans show a location for solar PV equipment ▪ Plans show a pathway for conduit ▪ Reserve electrical panel capacity for PV ▪ Conduit required for new buildings	R408†	Required on construction documents: ▪ Location for inverters, metering equipment, battery equipment, energy storage equipment and other equipment necessary to connect PV to grid. ▪ Pathway for routing conduit from PV panel location to interconnection with electrical service. Reserved electrical panel capacity: ▪ Single family/duplex: 5kW PV per unit ▪ Multi-family: common area load or roof space Conduit required, ≥1½ in. from: ▪ Electrical panel to inverter ▪ Inverter to underside of roof	☐ Solar equipment locations ☐ Conduit routing pathway
Electric vehicle readiness	A dedicated receptable or junction box must be provided for each enclosed attached garage to support AC Level 2 charging	R408†	AC Level 2 is defined as 208 to 240V AC, 1-phase, minimum 16A. See also https://www.resilientoahu.org/energycode	

* Code section added or modified by State amendment

† Code section added or modified by Honolulu amendment

END OF PRESCRIPTIVE CHECKLIST

LARGE SINGLE-FAMILY HOMES REQUIREMENTS CHECKLIST

These requirements apply to single family homes over 7,000 ft^2 and are added by Honolulu amendment.

Component/System	Requirement	Code Section	Plan Review Notes	Info on Plans
Design professional statement	Form included on plans with signature of design professional	R103.1† R103.2†	See the Honolulu amendments for required format.	☐ Signature block included
Certificate	Permanent certificate	R401.4†	Posted on a wall in approved location. Includes insulation R-values, window SHGC, results of duct and air leakage testing (if required), efficiency of air conditioning and water heating equipment, PV system information (if applicable), Energy Rating Index score (if applicable)	
Additional requirements for all homes >7,000 ft^2				
Smart appliances	The following must be capable of responding to grid signals ▪ Electric water heaters ▪ Air conditioners > 2.5 tons ▪ Pool and spa pumps ▪ Electric pool and spa heaters	R401.3.1†		
Exterior wall minimum efficiency	Either: ☐ Minimum area-weighted initial solar reflectance ≥ 0.30 ☐ Insulation ≥ R-13	R401.3.1†		
Roof minimum efficiency	Two of the following: ☐ Insulation ≥ R-30 ☐ Attic ventilation + radiant barrier ☐ Reflective roof	R401.3.1†	Attic venting meets IRC Section R806.1 and radiant barrier emittance ≤ 0.05 Roof solar reflectance index (SRI) ▪ Low slope: Initial ≥ 82, 3-year ≥ 64 ▪ Steep-slope: initial ≥ 28, 3-year ≥ 25	
High efficacy lighting	Definition of high efficacy lighting is increased to 90 lumens per watt	R401.3.1†		
Solar conduit and electrical panel readiness	See prescriptive checklist	R408†		
Electric vehicle readiness	See prescriptive checklist	R408†		

Component/System	Requirement	Code Section	Plan Review Notes	Info on Plans
Additional requirements for homes >7,000 ft^2 that have ≥2,000 ft^2 conditioned space				
Compliance alternatives	☐ Simulated performance ☐ Energy rating index	R401.3.2†	Large homes must use one of these two compliance options and may not use either the tropical zone option or prescriptive compliance option. For the **simulated performance alternative**, energy cost or source energy must be at least 10% lower than the standard design. For the **energy rating index alternative**, ERI ≤ 52 not including onsite power.	
HVAC equipment	Multi-stage or variable capacity systems required	R401.3.2†		
Thermostats	Demand responsive control	R401.3.2†	Thermostats shall be provided with demand responsive control that complies with the communication and performance requirements of AHRI 1380 and capable of communicating with the Virtual End Node (VEN) using a wired or wireless bi-directional communication pathway that provides the homeowner the ability to voluntarily participate in utility demand response programs. Specific required control functions are described in the Honolulu amendments	

† Code section added or modified by Honolulu amendment

END OF LARGE SINGLE FAMILY HOMES CHECKLIST

RESIDENTIAL ADDITIONS AND ALTERATIONS CHECKLIST

Component/System	Requirement	Code Section	Plan Review Notes	Info on Plans
Additions	Requirements for new construction apply to additions. Unaltered portions of the existing building are not required to comply.	R502	New construction requirements apply to all these elements if they are part of an addition: ▪ Building envelope assemblies ▪ New HVAC systems and components ▪ New water heating systems ▪ New lighting systems As an alternative, the Simulated Performance Alternative can be used for the combination of the existing building and addition.	See requirements for new construction
Alterations – walls	Meet requirements for new construction (see separate checklist), with the following exceptions: 1. Wall cavity is not exposed 2. Wall cavity is filled with insulation	R503.1.1		
Alterations – windows and skylights	No requirements for glazing-only repairs of existing windows and skylights New construction requirements for solar heat gain coefficient (SHGC) apply for replacements that include sash and glazing. Area-weighted average may be used to comply when more than one window is replaced.	R503.1.1 R504		
Alteration – roof repair	No requirements	R504.2	"Roof repair" is reconstruction or renewal of any part of an existing roof for the purpose of its maintenance.	
Alterations – roof recover	No requirements	R503.1.1	"Roof recover" is the process of installing an additional roof covering over an existing roof covering without removing the existing roof covering.	

Component/System	Requirement	Code Section	Plan Review Notes	Info on Plans
Alterations – roof replacement	Roofs without insulation in the cavity and where the sheathing or insulation is exposed during a roof replacement shall meet one of the following: 1. R-30 insulation or cool roof 2. R-19 or cool roof for buildings eligible for Tropical Zone compliance 3. At least one of the following a. EnergyStar roof covering b. Radiant barrier c. Attic ventilation via solar fan(s) or ridge vents or gable vents d. One or more exceptions in Section C402.3 Footnote to exception: Shake roofs on battens must be replaced with materials that result in equal or improved energy efficiency	R503.1.1*	"Roof replacement" is the process of removing the existing roof covering, repairing any damaged substrate and installing a new roof covering. Cool roof definition is provided in section C402.3: ▪ Aged reflectance ≥0.55 + aged emittance ≥0.75, or ▪ aged solar reflectance index (SRI) ≥0.64 Exceptions listed in section C402.3 include: 1. Portions covered by the following: ▪ Photovoltaic systems or components. ▪ Solar air or water-heating systems or components. ▪ Roof gardens or landscaped roofs. ▪ Above-roof decks or walkways. ▪ Skylights. ▪ HVAC systems and components, and other opaque objects mounted above the roof. 2. Portions shaded during summer solstice 3. Portions ballasted with stone 17 lb/sf	
Alterations – air conditioning	New systems and components meet new construction requirements, except that duct extensions of less than 40 ft in unconditioned space do not require testing	R503.1.2		
Alterations – water heating	New water heating systems comply with requirements for new systems	R503.1.3		
Alterations - lighting	New lighting systems meet new construction requirement (high efficacy) unless fewer than 50% of fixtures are replaced and total lighting power does not increase.	R503.1.4		
Change in space conditioning	Unconditioned space altered to become conditioned space must be brought into full compliance with the code	R503.2	Exception for projects complying using the simulation performance alternative, the annual energy cost is permitted to be 110% of the cost otherwise allowed	

* Code section added or modified by State amendment

† Code section added or modified by Honolulu amendment

END OF ADDITIONS AND ALTERATIONS CHECKLIST

POINTS OPTION

The Points Option is an alternative to the prescriptive compliance for residential walls and roofs. This option is added to the energy code by State amendment as Section R407.

Select one or more efficiency measures for the roof and walls so that the total score ≥ 0. Roof and walls may comply together or separately.

There are two columns: one for dwellings following the standard prescriptive compliance path and another for dwellings following the Tropical Zone compliance path.

Points Option for Dwellings with Wood-Framed Walls

Measure	Standard Home Points	Tropical Home Points
R-13 Cavity Wall Insulation	0	1
R-19 Roof Insulation	-1	0
R-19 Roof Insulation + Cool roof membrane[1] or Radiant Barrier[3]	0	1
R-19 Roof Insulation + Attic Venting[2]	0	1
R-30 Roof Insulation	0	1
R-13 Wall Insulation + high reflectance walls[4]	1	2
R-13 Wall insulation + 90% high efficacy lighting and Energy Star Appliances[5]	1	2
R-13 Wall Insulation + exterior shading wpf=0.3[6]	1	2
Ductless Air Conditioner[7]	1	1
1.071 X Federal Minimum SEER for Air Conditioner	1	1
1.142 X Federal Minimum SEER for Air Conditioner	2	2
No air conditioning installed	Not Applicable	2
House floor area ≤ 1,000 ft^2	1	1
House floor area ≥ 2,500 ft^2	-1	-1
Energy Star Fans[8]	1	1
Install 1 kW or greater of solar electric	1	1

See the last page for notes

Points Option for Dwellings with Metal-Framed Walls

Measure	Standard Home Points	Tropical Home Points
R-13 +R 3 Wall Insulation	0	1
R-13 Cavity Wall insulation + R-0	-1	0
R-13 Wall Insulation + high reflectance walls[4]	0	1
R-13 Wall insulation + 90% high efficacy lighting and Energy Star Appliances[5]	1	2
R-13 Wall Insulation + exterior shading wpf=0.3[6]	0	1
R-30 Roof Insulation	0	1
R-19 Roof Insulation	-1	0
R-19 + Cool roof membrane[1] or Radiant Barrier[3]	0	1
R-19 Roof Insulation + Attic Venting[2]	0	1
Ductless Air Conditioner[7]	1	1
1.071 X Federal Minimum SEER for Air Conditioner	1	1
1.142 X Federal Minimum SEER for Air Conditioner	2	2
No air conditioning installed	Not Applicable	2
House floor area ≤ 1,000 ft^2	1	1
House floor area ≥ 2,500 ft^2	-1	-1
Energy Star Fans[8]	1	1
Install 1 kW or greater of solar electric	1	1

See the last page for notes

Points Option for Dwellings with Mass Walls

Measure	Standard Home Points	Tropical Home Points
R-3/4 Insulation	0	1
R-0 Wall insulation	-1	0
R-0 Wall Insulation + high reflectance walls[4]	0	1
R-0 Wall insulation + 90% high efficacy lighting and Energy Star Appliances[5]	1	2
R-0 Wall Insulation + exterior shading wpf=0.3[6]	0	1
R-19 Roof/ceiling Insulation	-1	0
R-19 + Cool roof membrane[1] or Radiant Barrier[3]	0	1
R-19 Roof Insulation + Attic Venting[2]	0	1
R-30 Roof/ceiling Insulation	0	1
Ductless Air Conditioner[7]	1	1
1.071 X Federal Minimum SEER for Air Conditioner	1	1
1.142 X Federal Minimum SEER for Air Conditioner	2	2
No air conditioning installed	Not Applicable	2
House floor area ≤ 1,000 ft^2	1	1
House floor area ≥ 2,500 ft^2	-1	-1
Energy Star Fans[8]	1	1
Install 1 kW or greater of solar electric	1	1

Notes:

[1] Cool roof with three-year aged solar reflectance of 0.55 and 3-year aged thermal emittance of 0.75 or 3-year aged solar reflectance index of 64.

[2] One cfm/ft^2 attic venting.

[3] Radiant barrier shall have an emissivity of no greater than 0.05 as tested in accordance with ASTM E-408. The radiant barrier shall be installed in accordance with the manufacturer's installation instructions.

[4] Walls with covering with a reflectance of ≥ 0.64.

[5] Energy Star rated appliances include refrigerators, dishwashers, and clothes washers and must be installed for the Certificate of Occupancy

[6] The wall projection factor is equal to the horizontal distance from the surface of the wall to the farthest most point of the overhang divided by the vertical distance from the first-floor level to the bottom most point of the overhang.

[7] All air conditioning systems in the house must be ductless to qualify for this credit.

[8] Install ceiling fans in all bedrooms and the largest space that is not used as a bedroom.