

## IECC 2015 with Hawaii Amendments

### FREQUENTLY ASKED QUESTIONS

June 15, 2018

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#### GENERAL QUESTIONS

	Code Reference
<b>Q</b> When will IECC 2015 be formally adopted?	
A All four counties are expected to adopt in 2019. Governor Ige signed the Administrative Rule into law on March 20, 2017 and it was immediately enforced on State Government projects. As of June 2018, the County of Kauai's 2015 IECC, as amended, had passed second reading. The remaining counties are expected to commence the adoptive process in 2018.	
<b>Q</b> What is the process for county adoption of the 2015 IECC?	
A First, adoption is considered by the Hawaii Building Code Council ("Council"). All four Building Division Managers sit on the Council and constitute a separate committee. Each proposed amendment must be unanimously approved by that committee. 2) Since the Council agreed to bypass the Administrative Rule process in the future, the approved amendments go to each county's Public Works Department, which may further amend the proposals and have them approved by their Corporation Councils. 3) The mayors approve the respective ordinance from their Public Works Department and sends the proposed ordinance to their County Council for hearings. 4) Upon approval of the County Council, the mayor signs the ordinances into law.	
<b>Q</b> Where can I find the Hawaii amendments? Where can I find the amendments for each County?	
A The State Energy Office website: <a href="http://energy.hawaii.gov/hawaii-energy-building-code">http://energy.hawaii.gov/hawaii-energy-building-code</a>	
<b>Q</b> Does a home without air conditioning need to meet the energy code?	R402.2; R407.1
A Yes, envelope and lighting provisions	R401.2.1
<b>Q</b> Does a nonresidential building without air conditioning need to meet the energy code?	

A Yes, envelope, lighting and water heating requirements apply. Please refer to Hawaii amendments to section C402.1.1.

**Q Does a warehouse without air conditioning need to meet the energy code?**

A Yes, envelope and lighting provisions

**Q Does screened-in lanai space count as floor area in the calculation of the fraction of floor area with air conditioning, which is a qualification for using the Tropical Zone compliance option?**

A No R401.2.1(1)

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## ENVELOPE QUESTIONS

	Code Reference
<b>Q What are the compliance options for walls made of concrete masonry units or poured-in-place concrete?</b>	
A Mass walls require insulation. Low-rise residential buildings require either R-3 exterior insulation or R-4 interior insulation. Nonresidential buildings require R-5.7 insulation.  Check county amendments for potential alternatives for wall shading or reflective surface coatings.	Table R402.1.2, Table R407.1, C402.1, C402.2
<b>Q In steel frame wall construction, do headers need to be insulated?</b>	
A No	R407.1
<b>Q In the table of R-value requirements for roof and walls, is the R-value for the insulation or the whole assembly?</b>	
A The R-value listed in the table is for the insulation alone, not counting other portions of the assembly such as gypsum board, sheathing or studs.	C402.1.3
<b>Q We're building metal framed walls which require R-13 plus R-5 exterior. We have frame panels insulated to R-18. Would these work instead?</b>	

- A As an alternative to the insulation R-value requirement in Table C402.1.3, you may use the U-factor method in Table C402.1.4. For metal frame walls, the maximum U-factor is U-0.077. The R-18 panels would comply if you can show that the U-factor for the wall construction is no greater than U-0.077. Table C402.1.4
- Q For re-roofing of buildings that do not have roof sheathing, does the code's insulation requirement still apply?**
- A The IECC requires that a roof be brought into compliance with the insulation requirements as part of a roof replacement where the existing roof covering is removed and a new roof covering is installed. The assumption is that there is an opportunity for a cost-effective upgrade at that point, either by filling an exposed cavity with insulation, adding foam board insulation on top of the sheathing, or by some other means such as a combination of a radiant barrier and cool roof. The question is whether this requirement applies to roofs without sheathing, such as tile or shingle roofs with battens. In some of those cases a cost-effective upgrade may be feasible, while in other cases the expense to upgrade the roof may be unreasonable. Therefore, projects without roof sheathing should be judged by the building department on a case-by-case basis. The amendments to the Administrative rule, and to Kauai and Maui county amendments, include the amendments allowing radiant barriers, roof vents and Energy Star roof surfaces. Hi Amendment to C503.3.1
- Q If I am repairing a small portion of my roof and exposing the roof sheathing of that portion, do I need to upgrade the insulation?**
- A The code does not specify a minimum area threshold for triggering the requirement to upgrade roof insulation but only requires that insulation be added where there is no insulation installed. However, it may not be practical, for example, to add foam board insulation on top of the sheathing on only a small portion of an existing roof. Therefore, a reasonable interpretation of the requirement is that it applies when the whole roof is being re-roofed. Hi Amendment to C503.3.1
- Q We're renovating an older single-story shopping mall. The existing roofs have no insulation. The walls and windows are shaded by overhangs 6' and above. How to comply?**
- A If air conditioning is being installed in a previously unconditioned space, then full envelope compliance is required. Otherwise, as described in Section C503, the general requirement is that the altered envelope components must comply, with some exceptions. C503

In this case, it may be easiest to install R-20 over the existing roof and apply a new membrane. The walls are exempt from insulation requirements by Hawaii amendment. Any new windows must meet the U-factor and SHGC requirements that apply to new construction.

**Q We are replacing roofing. If we find the existing roof uninsulated, must we comply with C402.1.3?**

A Yes.

**Q If a skylight is installed - will the entire roof need to be brought to code?**

A Only the skylight itself must meet the performance requirements in the code. The remainder of the roof does not need to be upgraded. C503.3.3

**Q AN AOA is reroofing a concrete roof. Do they need to insulate?**

A Yes. R503.1.1(3) requires insulation when the sheathing is exposed. In this case, the concrete roof is the sheathing. R503.1.1(3)

**Q Does an AOA (association of apartment owners) fall under the commercial roof requirements?**

A Residential buildings of three or fewer stories above grade fall under the residential requirements. P. C11, IECC 2015

**Q The 2006 IECC requires R-15 ci over flat roofs in commercial buildings. Has that changed?**

A Yes, the 2015 IECC requires E-20 ci; R-25ci for residential high rises. Table C402.1.3

**Q Does a roof for a new water treatment plant building need to comply with the reflective roof requirement?**

A If the building has no space conditioning and no habitable space, then it is exempt from the envelope requirements. Otherwise, it must comply with the envelope requirements. Those requirements include high reflectance surface for low-sloped roofs above conditioned space. If the building is not air conditioned, then it does not need a high reflectance roof, but the building must still comply with the other envelope requirements for all habitable space. C402.1.1 C402.3

- Q May a weighted average be used for roof insulation R-value compliance to accommodate slope for water drainage?**
- A Yes C402.2.2
- Q Can a reflective roof be used in lieu of roof insulation?**
- A No. Insulation is required in all cases. Reflective membranes are also required for low-sloped roofs over conditioned space. Table C402.3
- Q We are insulating a building that houses AC units. Does the roof reflectance requirement apply?**
- A Yes, if the space is air conditioned. Otherwise, a reflective roof is not required. C402.3
- Q Is credit given for the shading impact of a photovoltaic system on the roof?**
- A Portions of roofs that are shaded by solar air or water heating systems or components are exempt from Section C402.3, Roof solar reflectance and thermal emittance. C402.3
- Q If I install my roof insulation under the roof deck rather than on the floor of the attic, do I need to also include attic ventilation openings, which might penetrate the insulation?**
- A The energy code does not require attic ventilation in combination with insulation but may be required in other building codes. But when attic ventilation is installed between the insulation and the conditioned space, no credit can be taken for the insulation R-value. Roof insulation should be installed in direct contact with the air barrier and is part of the building thermal envelope. C202 C402.5
- Q Would attic vent holes, ridge vents and a .32 reflectivity Energy Star steep roof comply with the code for a non-conditioned building with a 15' ceiling?**
- A Officially no. Insulation is required. Could request a waiver from the building code official. Table C402.1.3
- Q Is attic/roof ventilation required together with a radiant barrier when a radiant barrier is used as a compliance option?**

- A No Table R407.1
- Q Is the manufacturer’s label for window solar heat gain coefficient (SHGC) required to be kept on the product?**
- A Not beyond inspection. C303.1.3  
C104.2.2
- Q How are wood jalousies treated by the energy code?**
- A Same as glass jalousies
- Q Are pre-fab metal buildings exempt from the code because they use less than 1 watt per sq. ft. for space conditioning?**
- A No. A Hawaii amendment lists under exemptions to the envelope requirements, “unconditioned space that does not contain habitable space.” It is assumed that the space is intended for habitation. C402.1.1(2)
- Q We have a townhouse project and are trying to follow the Tropical Path. However, in this case it is not practical to achieve 14% free vent area to meet the natural ventilation requirements. Alternative?**
- A Suggest considering whole house fans to achieve equal ventilation, and apply by the Alternative Methods and Means path. Otherwise, follow the prescriptive compliance path R401.2.1  
R102
- Q Regarding air leakage testing, section R402.4.1.2 reads, “Where required by the building code official, testing shall be required by an approved third party.” Shouldn’t testing be required, period?**
- A Air leakage testing is required for all residences that follow the prescriptive compliance path (not required under the Tropical Zone option). The testing may be performed by any party, including the contractor, unless the building code official requires the testing to be performed by an approved third party. . R402.4.1.2
- Q We are enclosing a lanai to provide a creative area for students. Is this considered a “habitable” area?**
- A Yes. It must comply with the envelope requirements. C402.1.1

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## ELECTRICAL QUESTIONS

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| <b>Q</b> R402.4.5, Recessed lighting, requires IC-rated luminaires. What if the luminaire is located entirely in the conditioned (or unconditioned) space. Does this requirement still apply?   |                  |
| <b>A</b> IC rated fixtures are required when they are installed in the building thermal envelope. If the fixture is completely within the thermal envelope, then it does not need to be IC rated. For example, if roof insulation is installed under the roof deck, creating an insulated and sealed attic, then recessed fixtures in the ceiling do not need to be IC rated.   | R402.4.5         |
| <b>Q</b> Do ceiling fans and lighting need to be included on plans for low-rise residential projects?   |                  |
| <b>A</b> Not when connected power is <200 amps  |                  |
| <b>Q</b> Public School retrofits from fluorescents to LED's often couple with the existing ballast rather than first removing the ballast. This wastes 20%-25% of the potential energy. Is this allowed?  |                  |
| <b>A</b> The code requires that lighting system alterations comply with the lighting power limits for new construction when 10 percent or more of the luminaires in a space are replaced. If only bulbs and/or ballasts are replaced, then the only requirement is that the replacement does not increase lighting power. The code does not prohibit use of existing ballasts in a LED retrofit. However, electricians should be encouraged to remove the ballast to maximize energy savings. | C503.6<br>C504.2 |

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## SYSTEMS QUESTIONS

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| <b>Q</b> Use of the residential Tropical Zone option requires solar water heating. Can extra solar electric capacity combined with either electric resistance or heat pump water heating be used in lieu of a solar thermal water heating system? |                |
| <b>A</b> This is not included as an option in the code.   | HRS 196-6.5    |
| <b>Q</b> Is duct testing required for every home in a development, or can only a sample be tested?  |                |

- A Testing is required for every home. R402.1.2
- Q Are commercial pools allowed to heat with any heat source?**
- A Pools have specific control requirements and have covers, unless heated by a solar or recovered heat C404.9, R403.10
- Q Does the new code prohibit reheat in complex HVAC systems?**
- A While they're not prohibited, section C403.4.4 puts a limit on simultaneous heating and cooling. C403.4.4
- Q We are planning to ventilate a gym with jalousie windows. is this permissible?**
- A The IECC requires that ventilation be provided according to Chapter 4 of the International Mechanical Code, which permits natural ventilation with a minimum opening area of 4% of floor area. Note that other ventilation codes may apply C403.2.6