

ROOFING CONTRACTORS
ASSOCIATION OF HAWAII

April 24, 2024 – Ewa Beach, Hawaii

2018 I-codes with Hawaii amendments

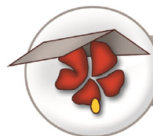


NRCA

Mark S. Graham

Vice President, Technical Services
National Roofing Contractors Association

1



ROOFING CONTRACTORS
ASSOCIATION OF HAWAII

October 3, 2017 – Honolulu, Hawaii

**NRCA update on
roofing industry technical issues**



NRCA

Mark S. Graham

Vice President, Technical Services
National Roofing Contractors Association

1

[Link](#)

2

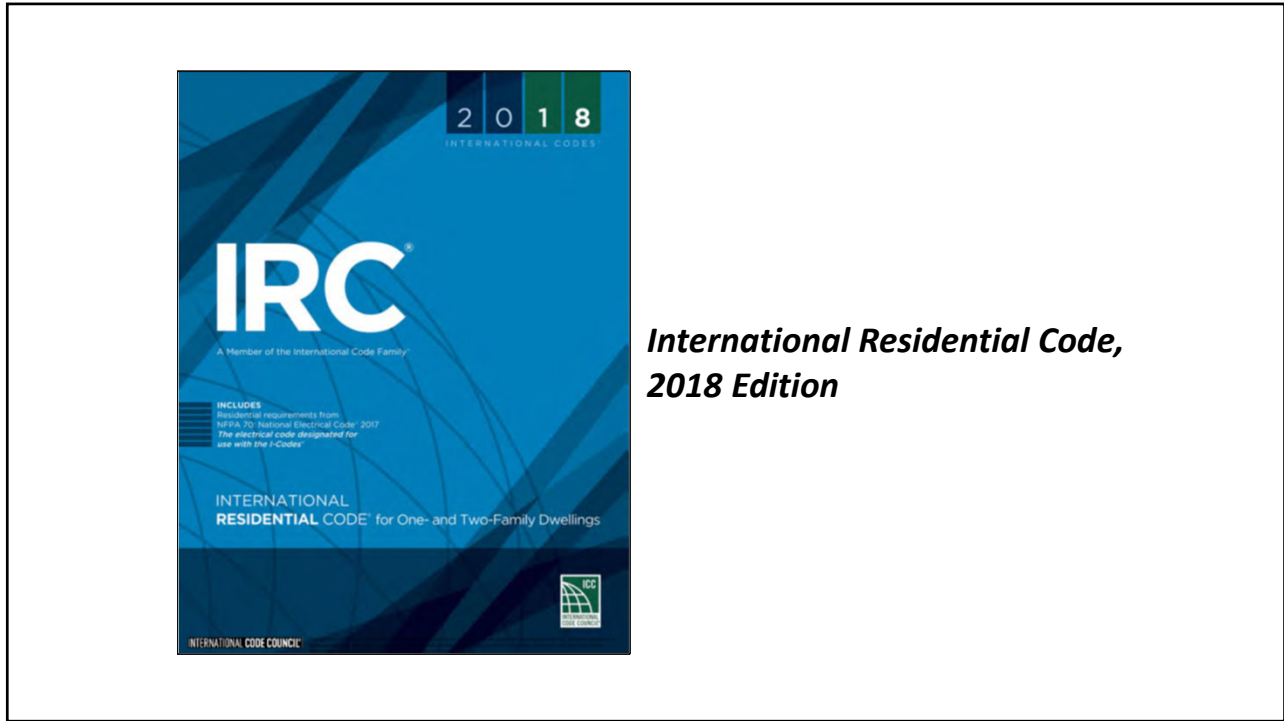
Today's topics

- I-code basics
- Residential versus Commercial
- Residential provisions:
 - Hawaii state amendments
 - Honolulu county and city amendments
- Commercial provisions:
 - Hawaii state amendments
 - Honolulu county and city amendments
- 2018 I-codes
- Questions and answers

3



4



International Residential Code, 2018 Edition

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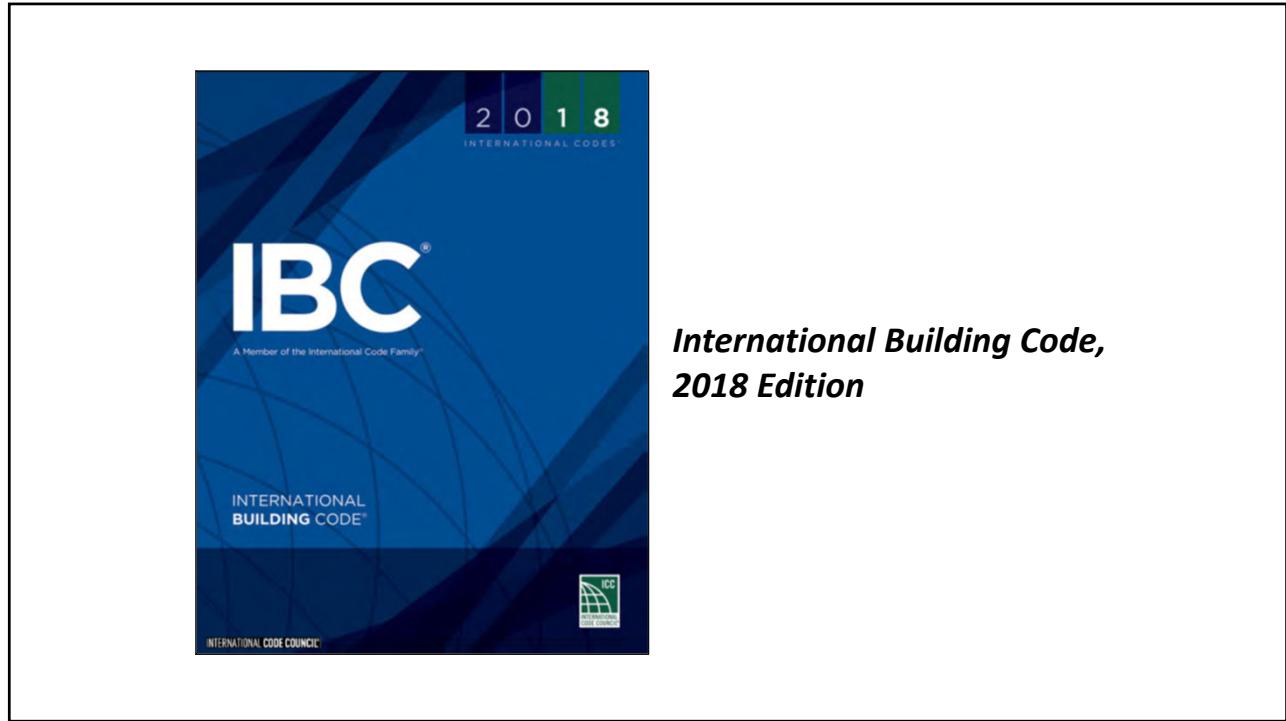
R101.2 Scope. The provisions of this code shall apply to the construction, *alteration*, movement, enlargement, replacement, repair, *equipment*, use and occupancy, location, removal and demolition of detached one- and two-family dwellings and *townhouses* not more than three stories above *grade plane* in height with a separate means of egress and their *accessory structures* not more than three stories above *grade plane* in height.

Exception: The following shall be permitted to be constructed in accordance with this code where provided with a residential fire sprinkler system complying with Section P2904:

1. Live/work units located in *townhouses* and complying with the requirements of Section 419 of the *International Building Code*.
2. Owner-occupied lodging houses with five or fewer guestrooms.
3. A care facility with five or fewer persons receiving custodial care within a dwelling unit.
4. A care facility with five or fewer persons receiving medical care within a dwelling unit.
5. A care facility for five or fewer persons receiving care that are within a single-family dwelling.

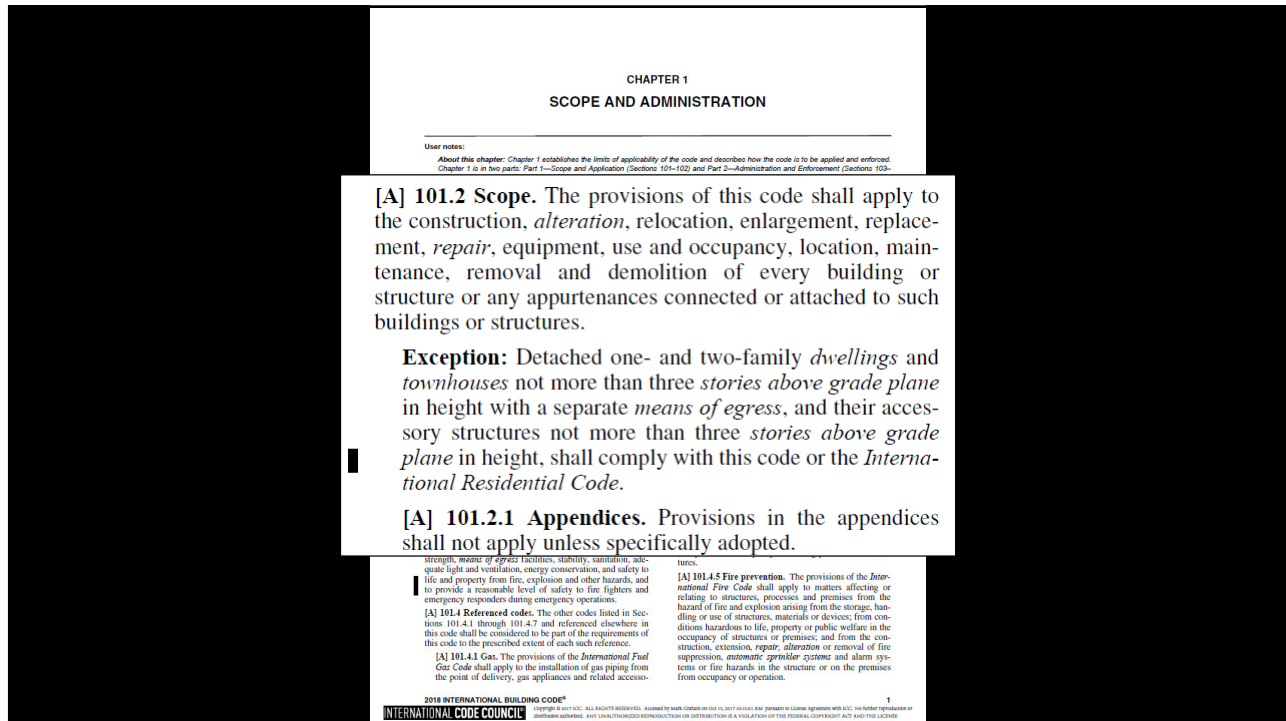
2018 INTERNATIONAL RESIDENTIAL CODE®
INTERNATIONAL CODE COUNCIL

6



International Building Code, 2018 Edition

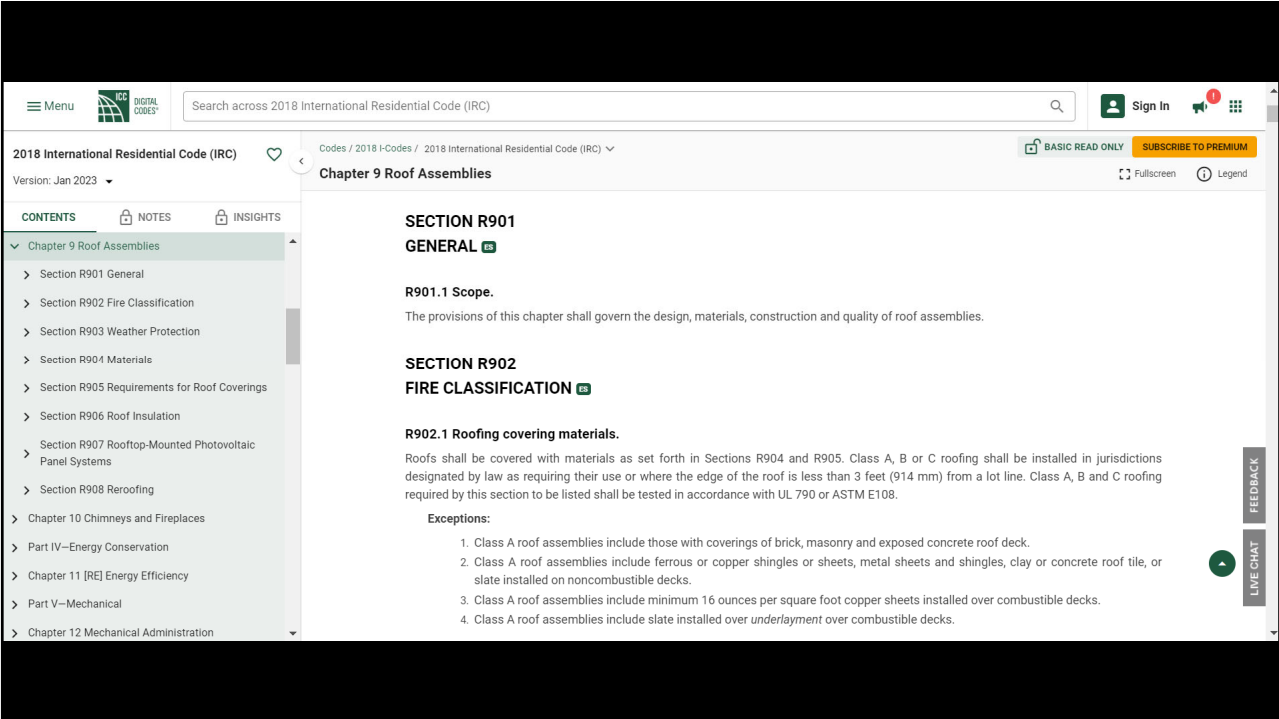
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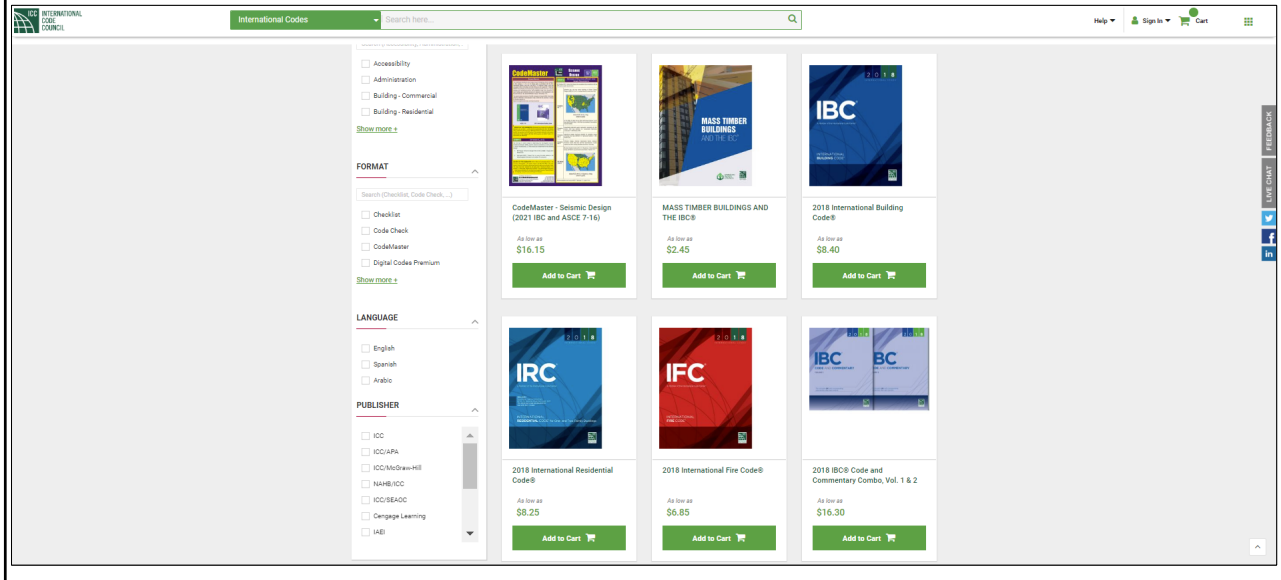
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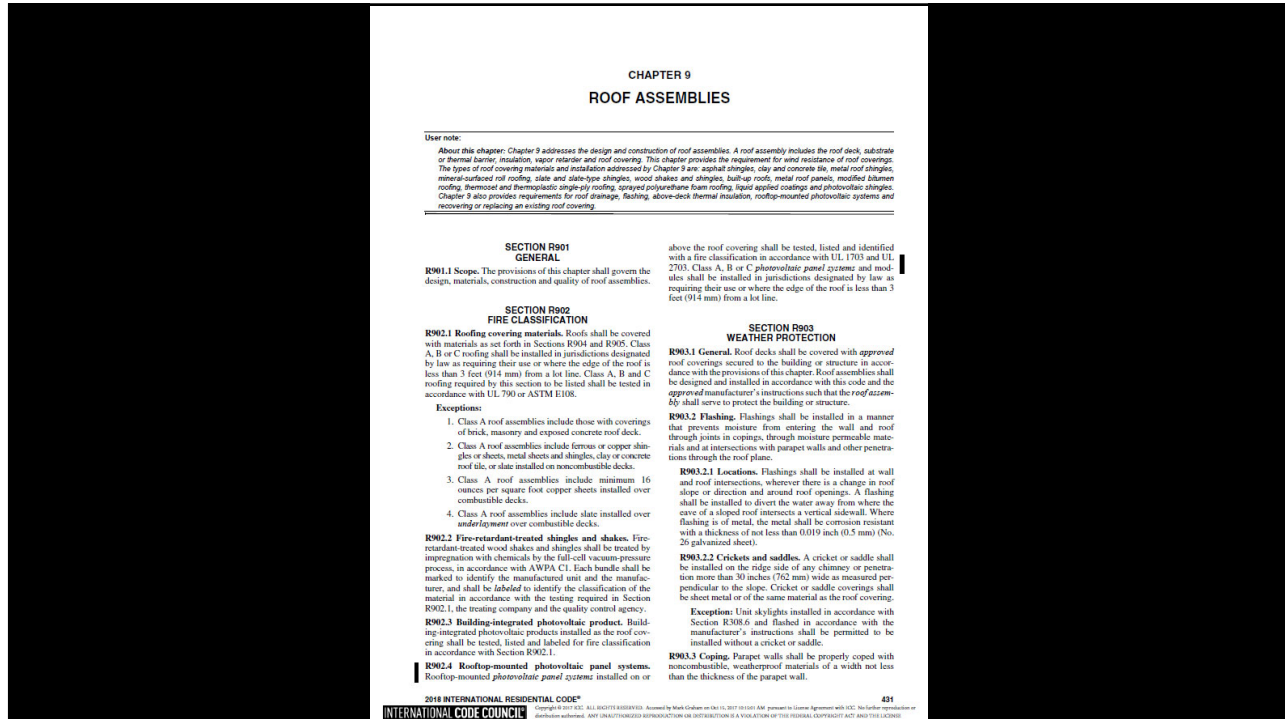
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Purchase hardcopy or PDF versions of the Code

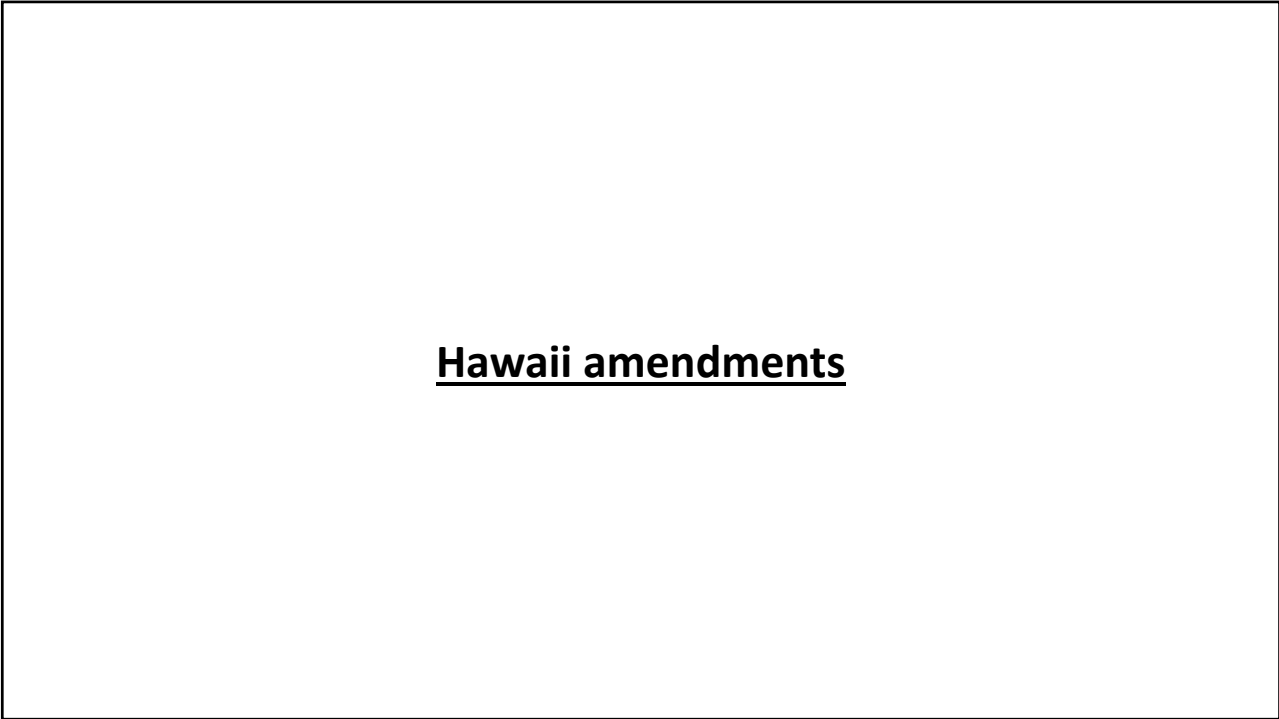
codes.iccsafe.org



11

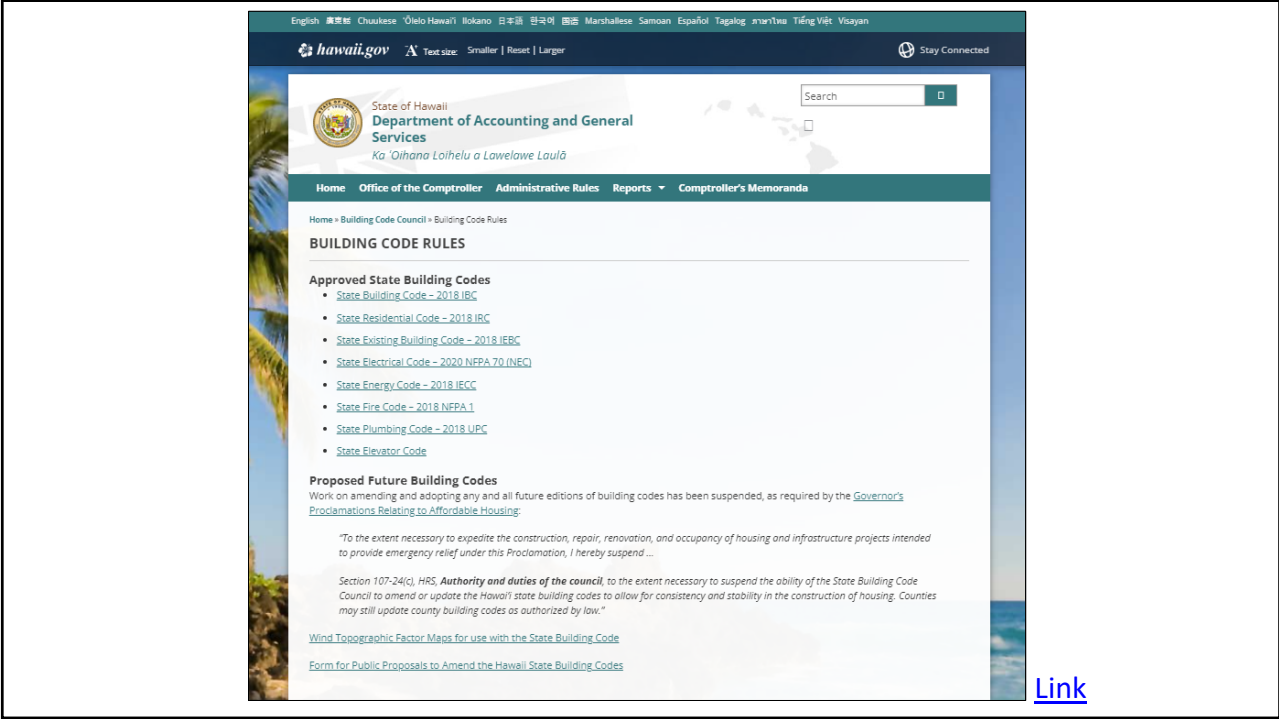


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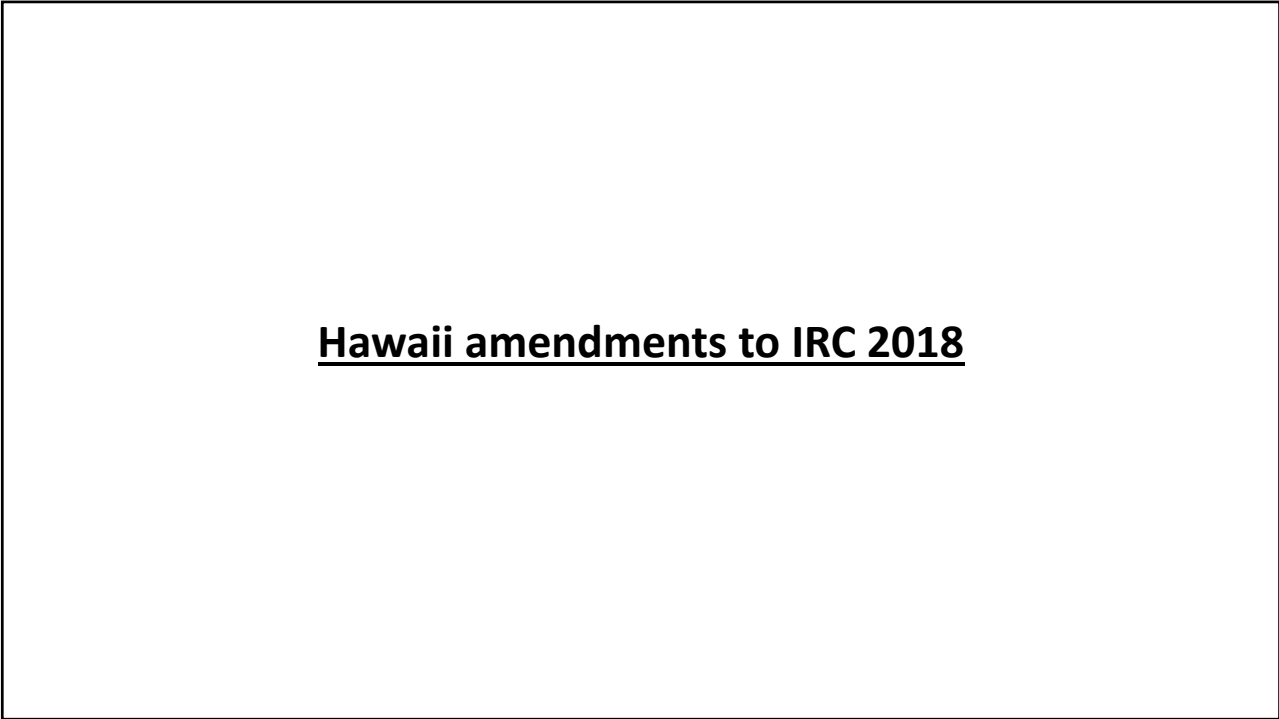


Hawaii amendments

13

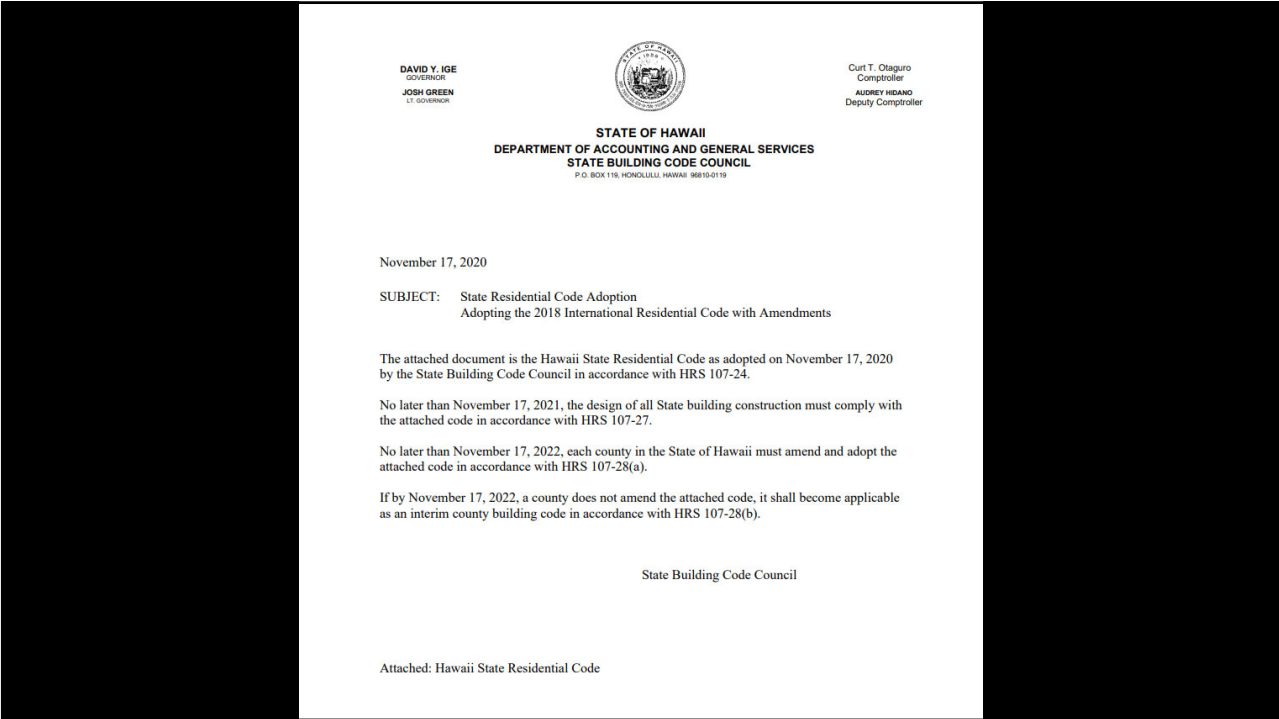


14



Hawaii amendments to IRC 2018

15



DAVID Y. IGE
GOVERNOR

JOSH GREEN
LT. GOVERNOR



Curt T. Otaguro
Comptroller

ALDREY HIGANO
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
STATE BUILDING CODE COUNCIL
P.O. BOX 116, HONOLULU, HAWAII 96810-0116

November 17, 2020

SUBJECT: State Residential Code Adoption
Adopting the 2018 International Residential Code with Amendments

The attached document is the Hawaii State Residential Code as adopted on November 17, 2020 by the State Building Code Council in accordance with HRS 107-24.

No later than November 17, 2021, the design of all State building construction must comply with the attached code in accordance with HRS 107-27.

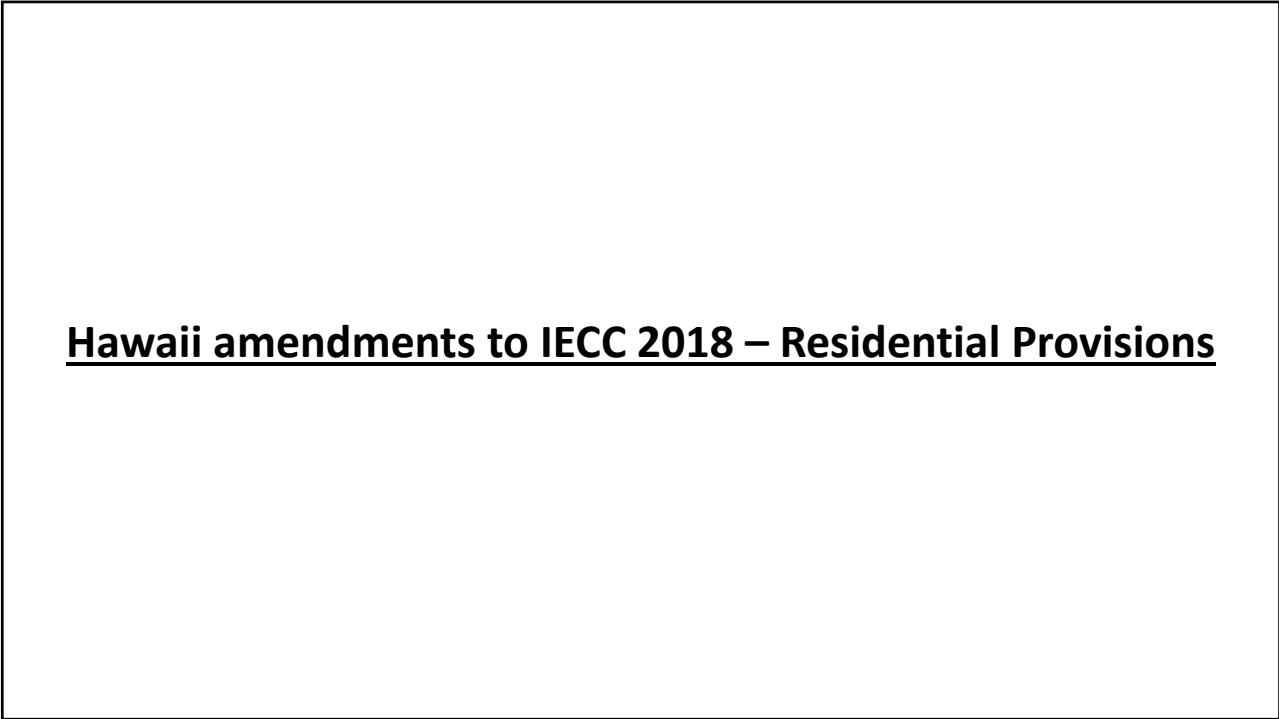
No later than November 17, 2022, each county in the State of Hawaii must amend and adopt the attached code in accordance with HRS 107-28(a).

If by November 17, 2022, a county does not amend the attached code, it shall become applicable as an interim county building code in accordance with HRS 107-28(b).

State Building Code Council

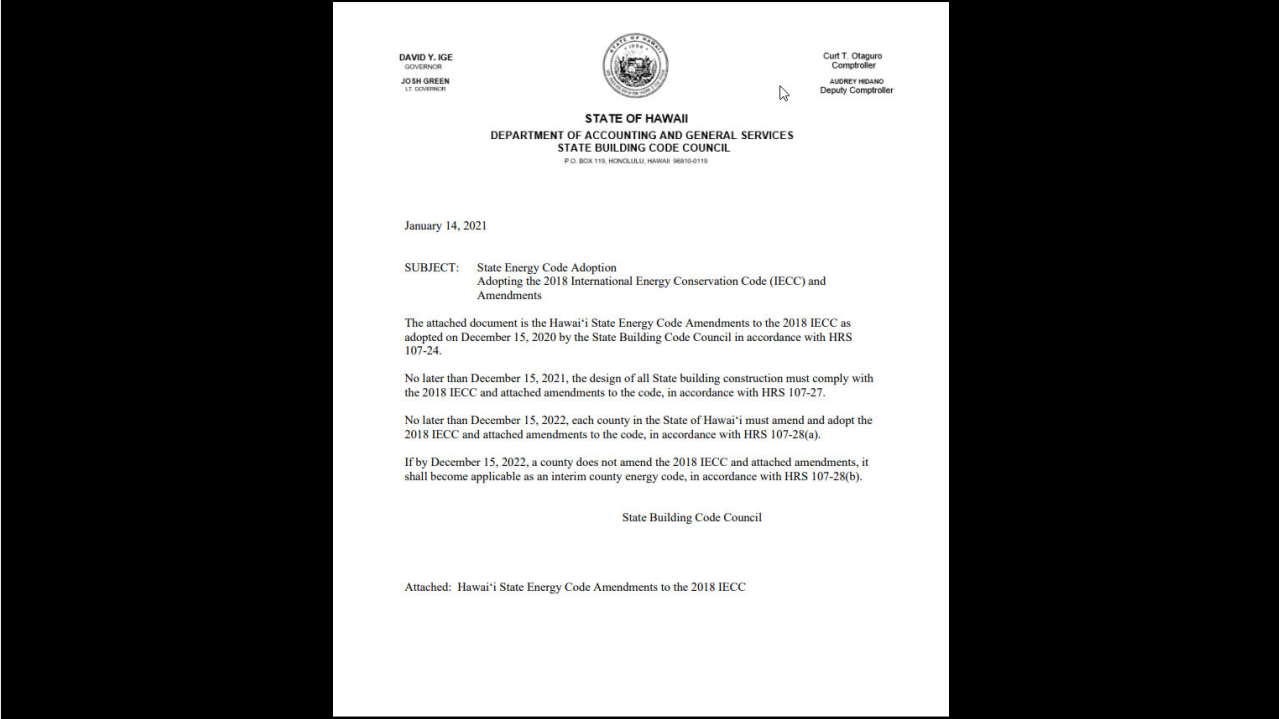
Attached: Hawaii State Residential Code

16

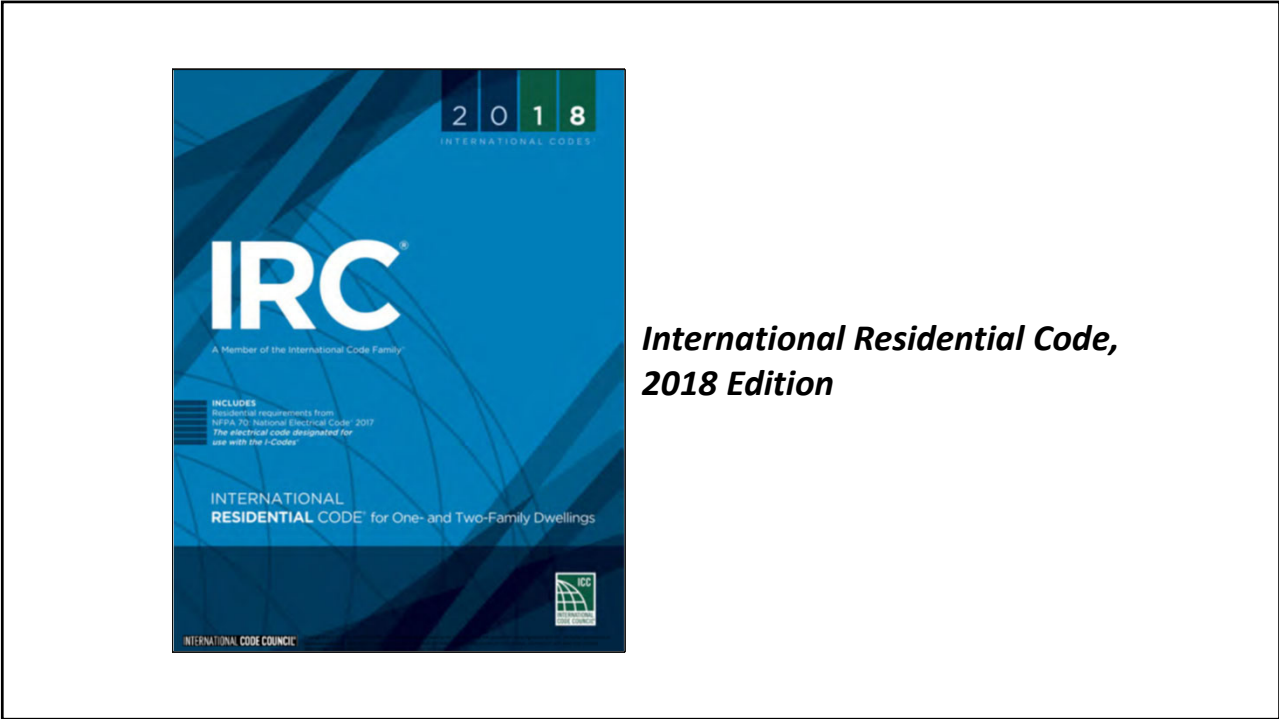


Hawaii amendments to IECC 2018 – Residential Provisions

17

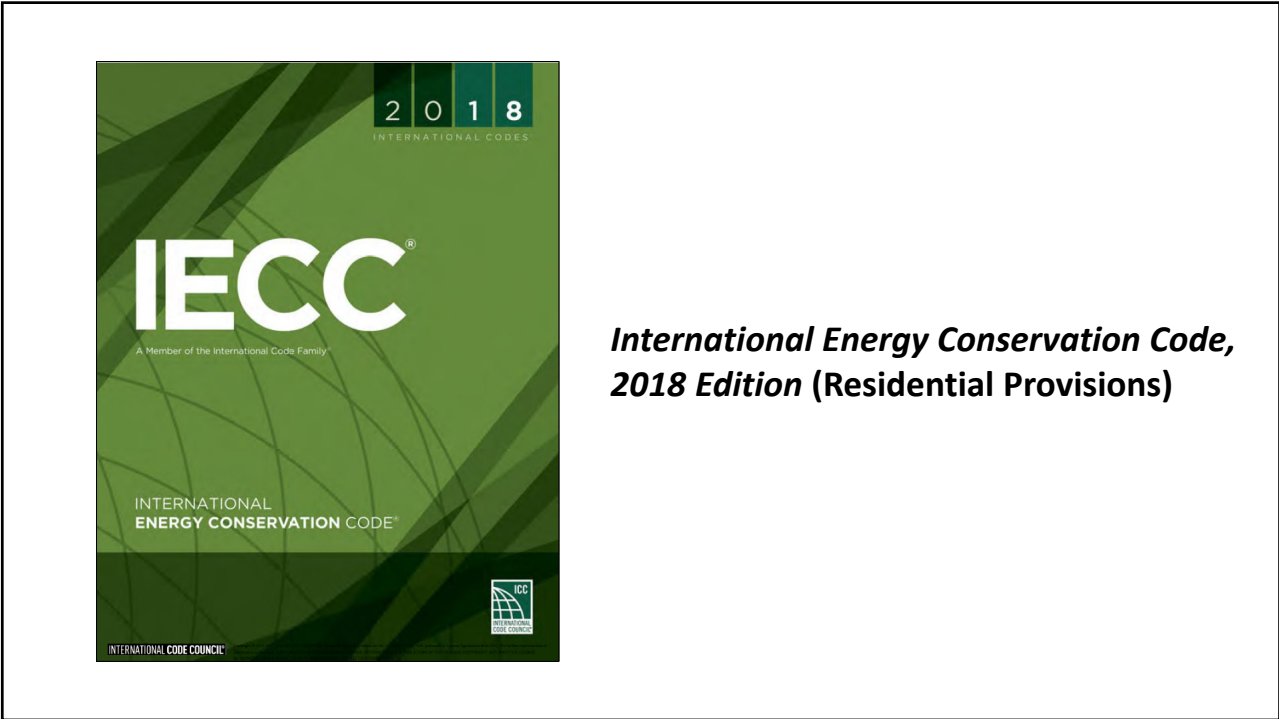


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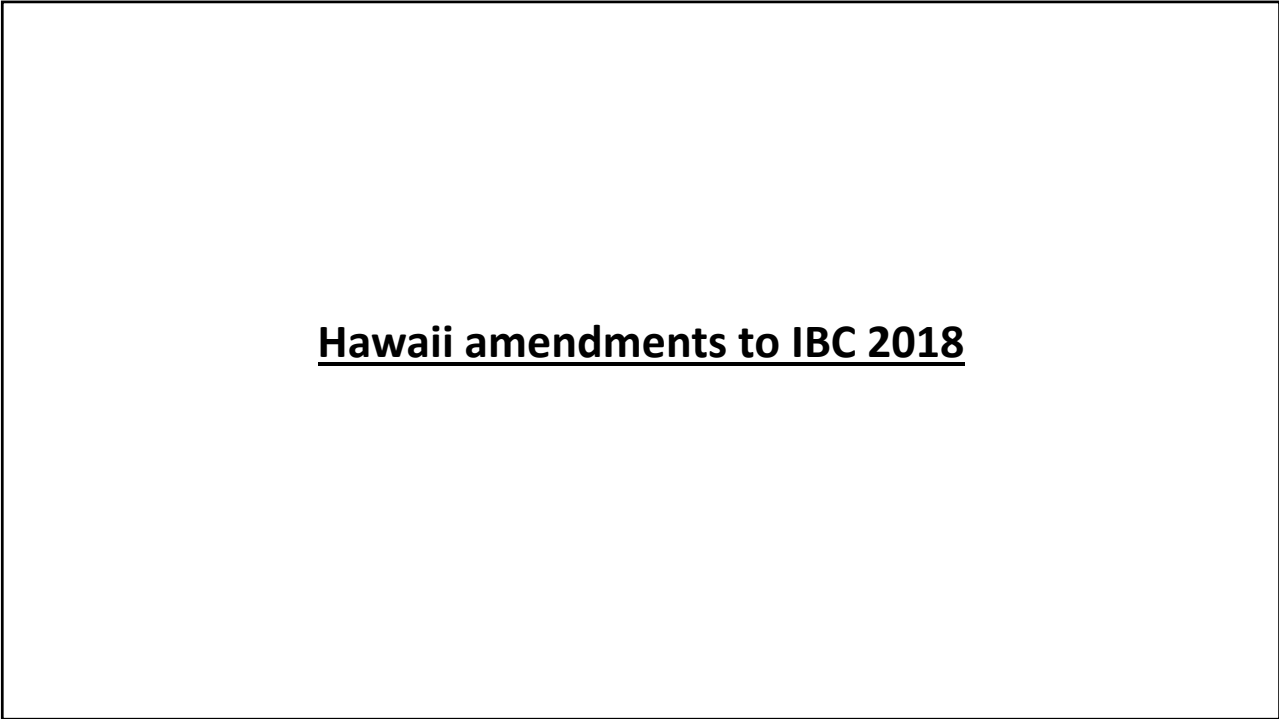
International Residential Code, 2018 Edition

19



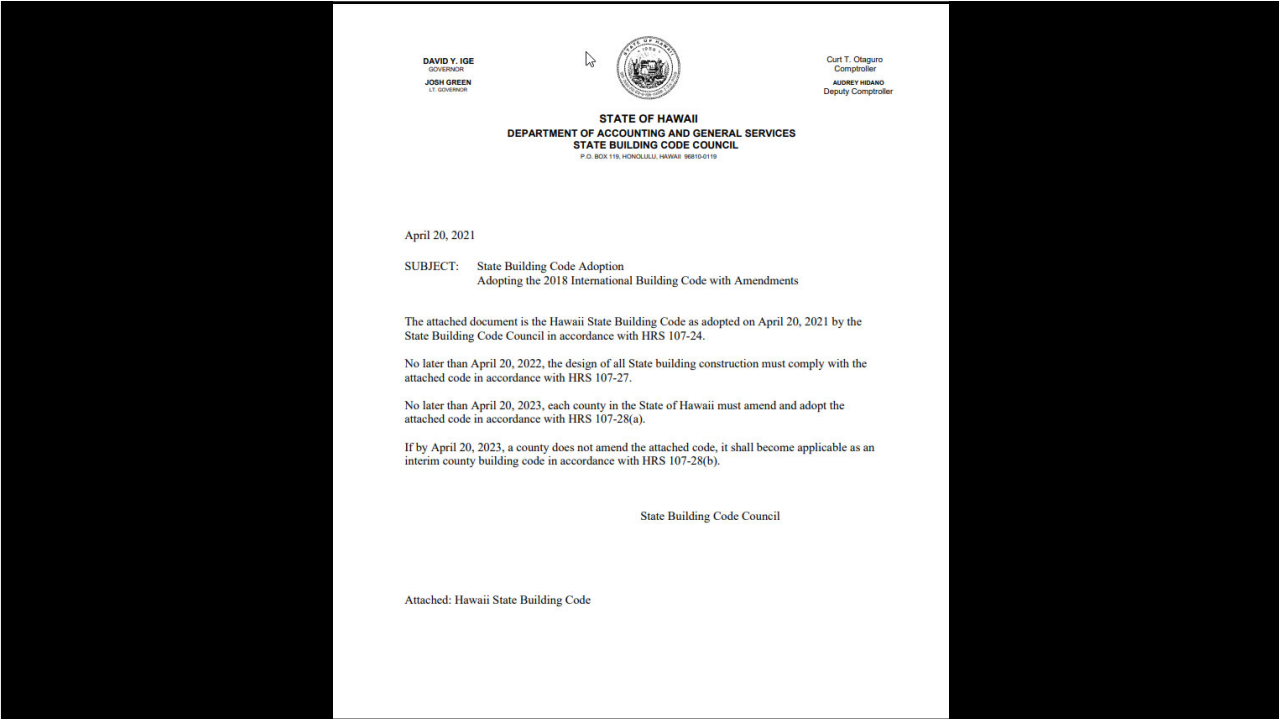
International Energy Conservation Code, 2018 Edition (Residential Provisions)

20



Hawaii amendments to IBC 2018


21



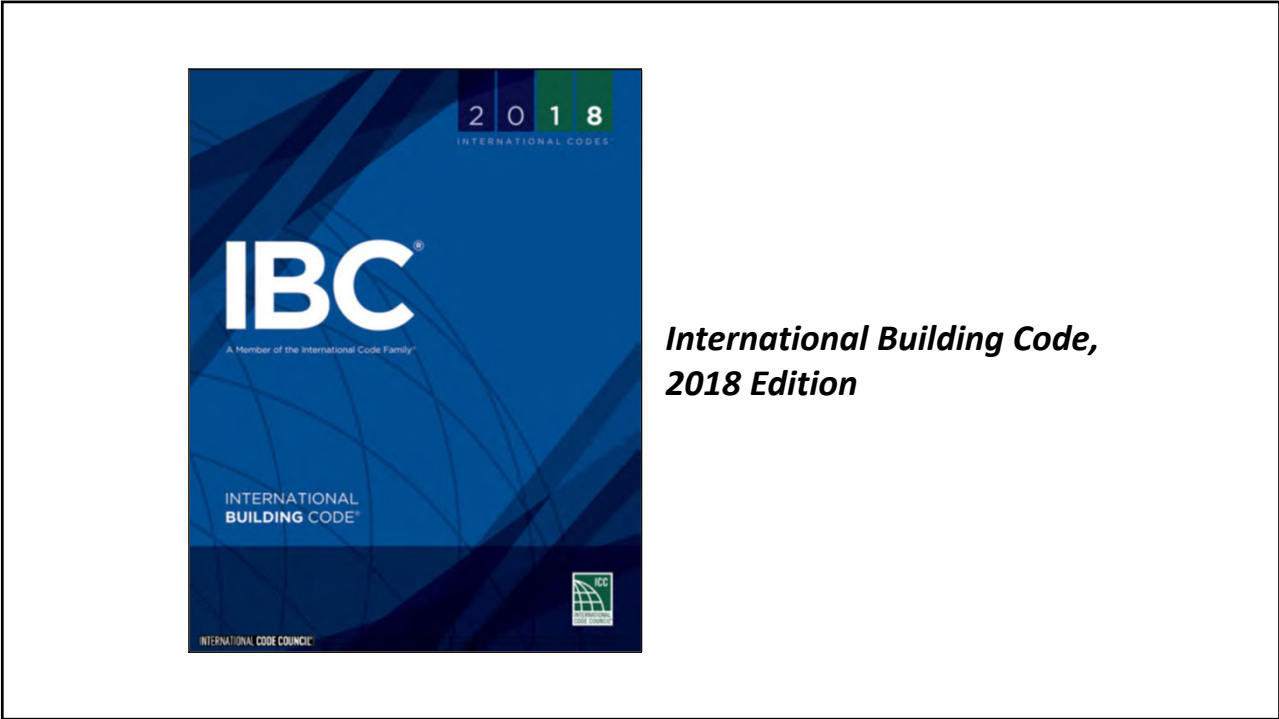
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Hawaii amendments to IECC 2018 – Commercial Provisions

23

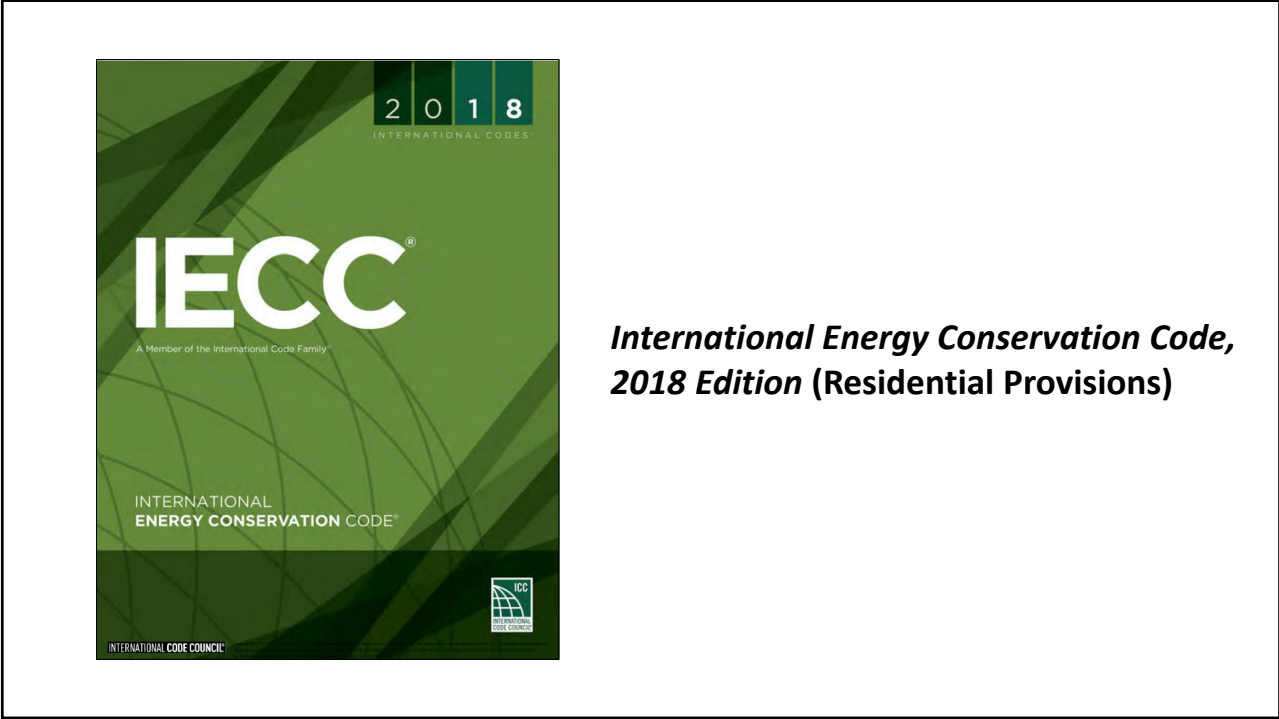
<p>DAVID Y. IGE GOVERNOR</p> <p>JOSH GREEN LT GOVERNOR</p>	 <p>STATE OF HAWAII DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES STATE BUILDING CODE COUNCIL <small>P.O. BOX 115, HONOLULU, HAWAII 96810-0115</small></p>	<p>Curt T. Obaguro Comptroller</p> <p>AUDREY HIGANO Deputy Comptroller</p>
<p>January 14, 2021</p> <p>SUBJECT: State Energy Code Adoption Adopting the 2018 International Energy Conservation Code (IECC) and Amendments</p> <p>The attached document is the Hawai'i State Energy Code Amendments to the 2018 IECC as adopted on December 15, 2020 by the State Building Code Council in accordance with HRS 107-24.</p> <p>No later than December 15, 2021, the design of all State building construction must comply with the 2018 IECC and attached amendments to the code, in accordance with HRS 107-27.</p> <p>No later than December 15, 2022, each county in the State of Hawai'i must amend and adopt the 2018 IECC and attached amendments to the code, in accordance with HRS 107-28(a).</p> <p>If by December 15, 2022, a county does not amend the 2018 IECC and attached amendments, it shall become applicable as an interim county energy code, in accordance with HRS 107-28(b).</p> <p style="text-align: center;">State Building Code Council</p> <p>Attached: Hawai'i State Energy Code Amendments to the 2018 IECC</p>		

24



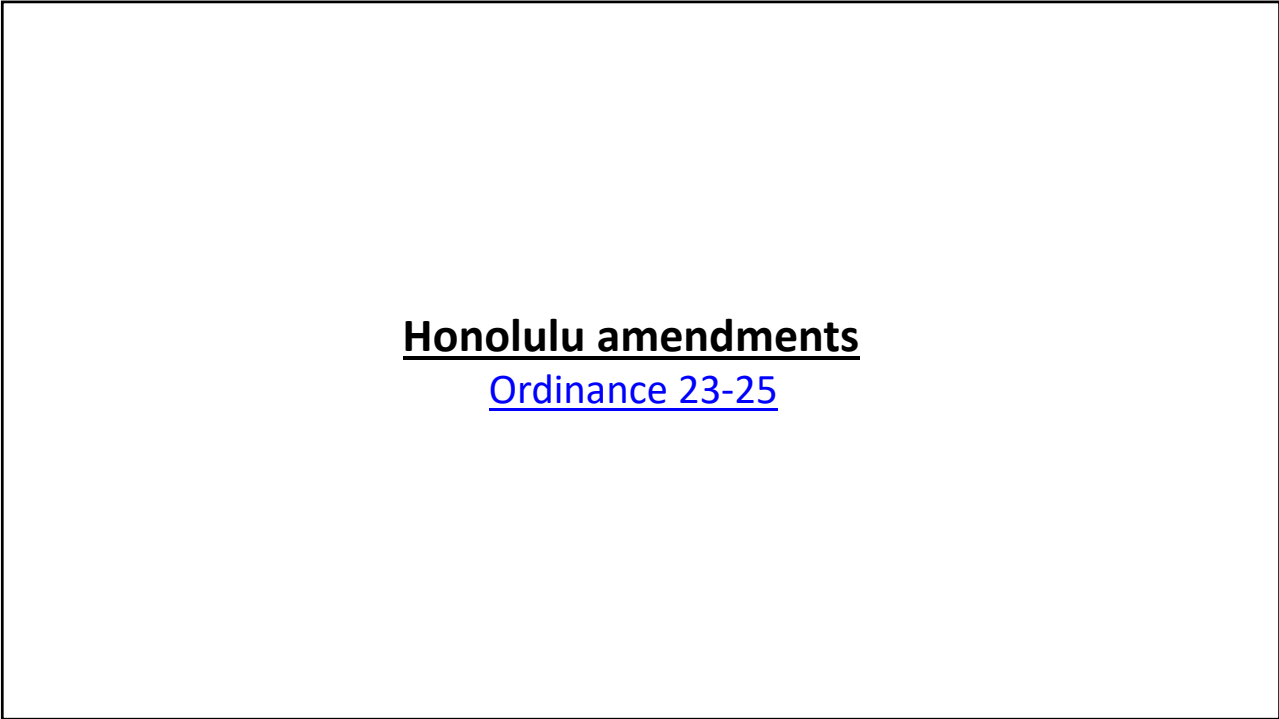
***International Building Code,
2018 Edition***

25




***International Energy Conservation Code,
2018 Edition (Residential Provisions)***

26



Honolulu amendments
Ordinance 23-25

27



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

ORDINANCE 23-25
BILL 4 (2023), CD2

A BILL FOR AN ORDINANCE

RELATING TO THE ADOPTION OF THE HAWAII STATE ENERGY CODE.

BE IT ORDAINED by the People of the City and County of Honolulu:

SECTION 1. Purpose. The purpose of this ordinance is to update the Building Energy Conservation Code of the City and County of Honolulu through the adoption of the Hawaii State Energy Code (December 15, 2020), subject to the local amendments herein.

SECTION 2. Chapter 16B, Revised Ordinances of Honolulu 2021 ("Building Energy Conservation Code"), is repealed.

SECTION 3. The Revised Ordinances of Honolulu 2021 is amended by adding a new Chapter 16B to read as follows:

"CHAPTER 16B: BUILDING ENERGY CONSERVATION CODE

ARTICLE 1: BUILDING ENERGY CONSERVATION CODE

§ 16B-1.1 Adoption of the State Energy Code.

The Hawaii State Energy Code (SEC), as adopted by the State of Hawaii on December 15, 2020, which adopts, with modifications, the International Energy Conservation Code, 2018 edition (IECC), as copyrighted by the International Code Council, is adopted by reference and made a part hereof, subject to the following amendments, which, unless stated otherwise, are in the form of amendments to the IECC 2018 edition:

- (1) Amending Section C101.1. Section C101.1 is amended to read:

C101.1 Title.

This code shall be known as the Building Energy Conservation Code (BECC) of the City and County of Honolulu (CCH) or the CCH BECC. It is referred to herein as "this code."
- (2) Amending Section C101.3. Section C101.3 is amended to read:

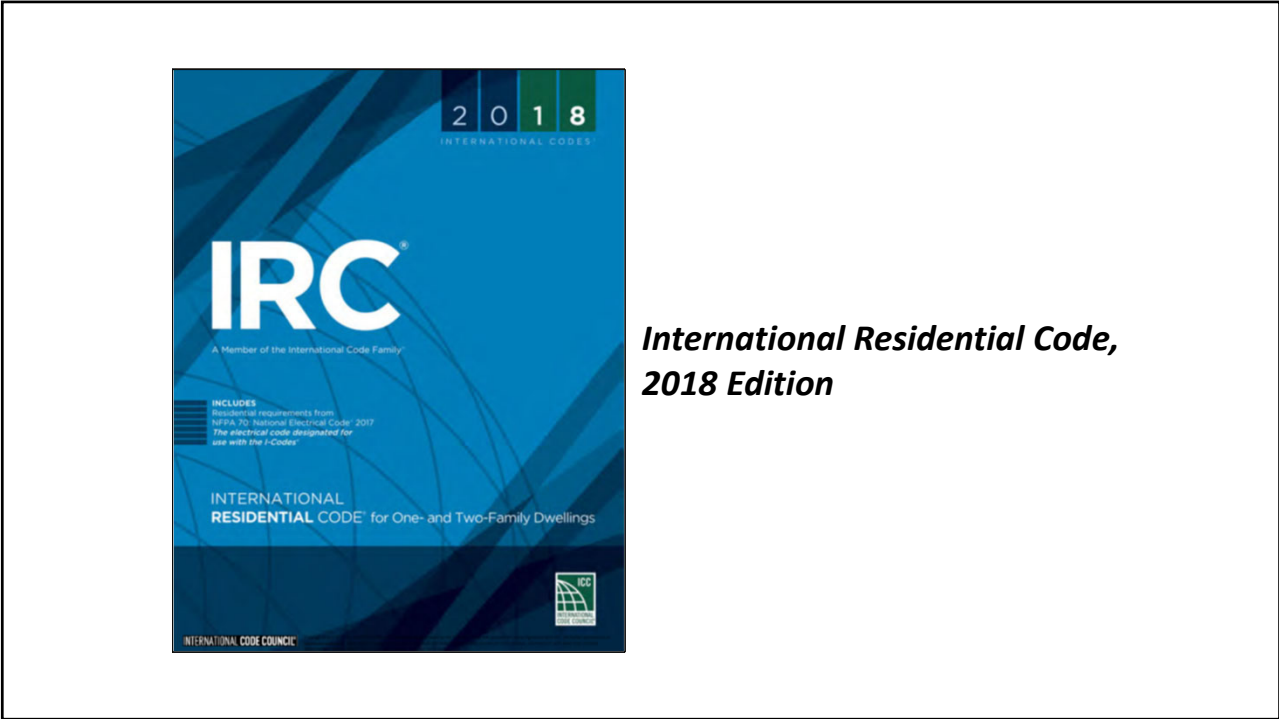
C101.3 Intent. This chapter sets forth minimum requirements for the design and construction of buildings for the effective use of energy and is intended to provide

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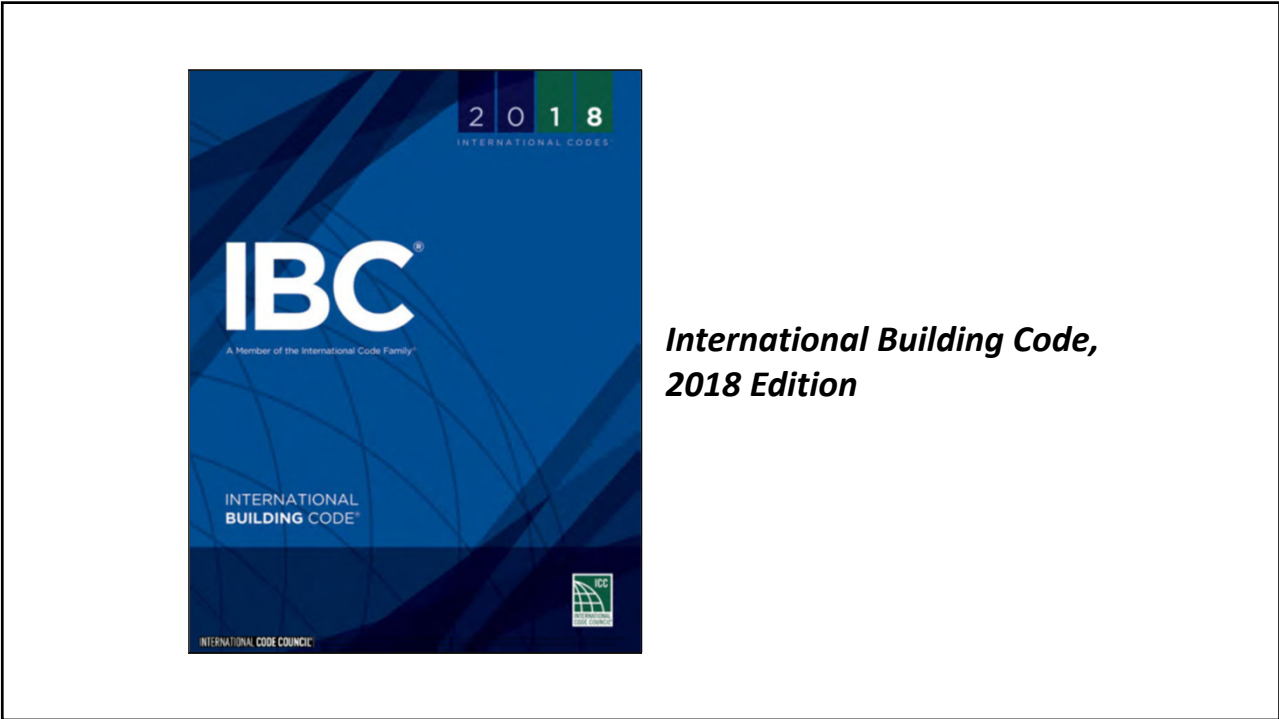
23-25

28



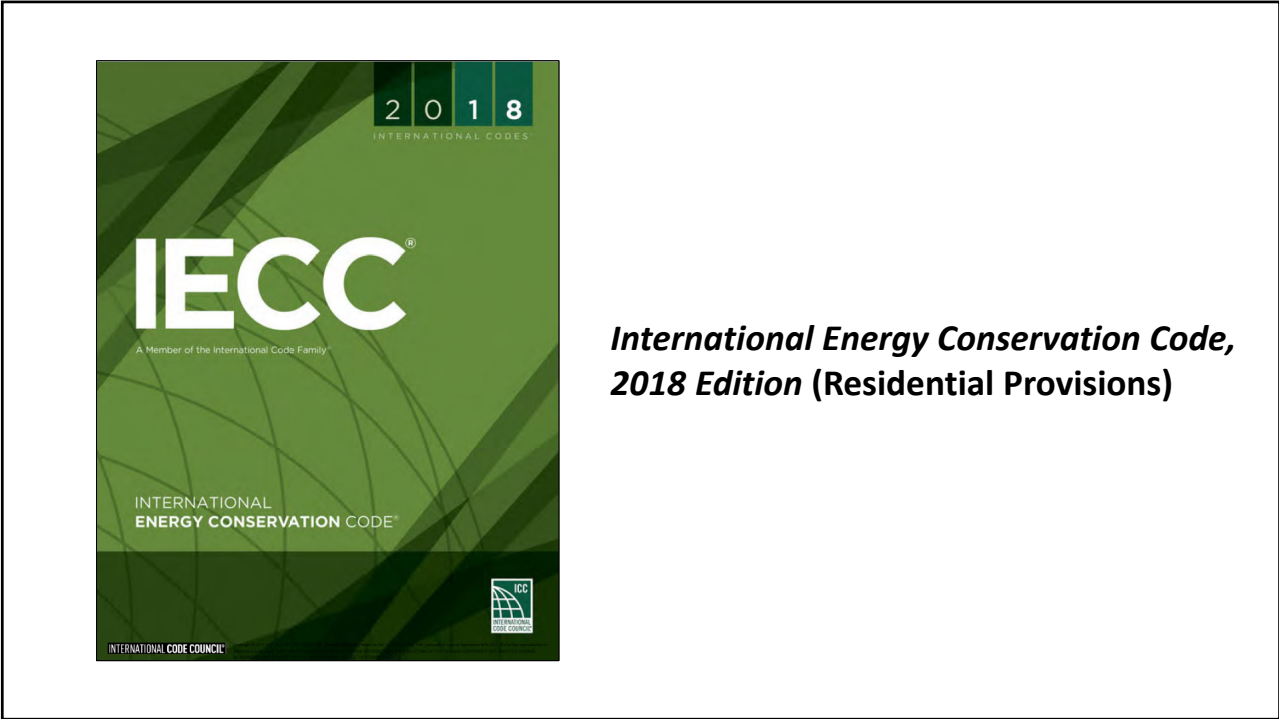
International Residential Code, 2018 Edition

29



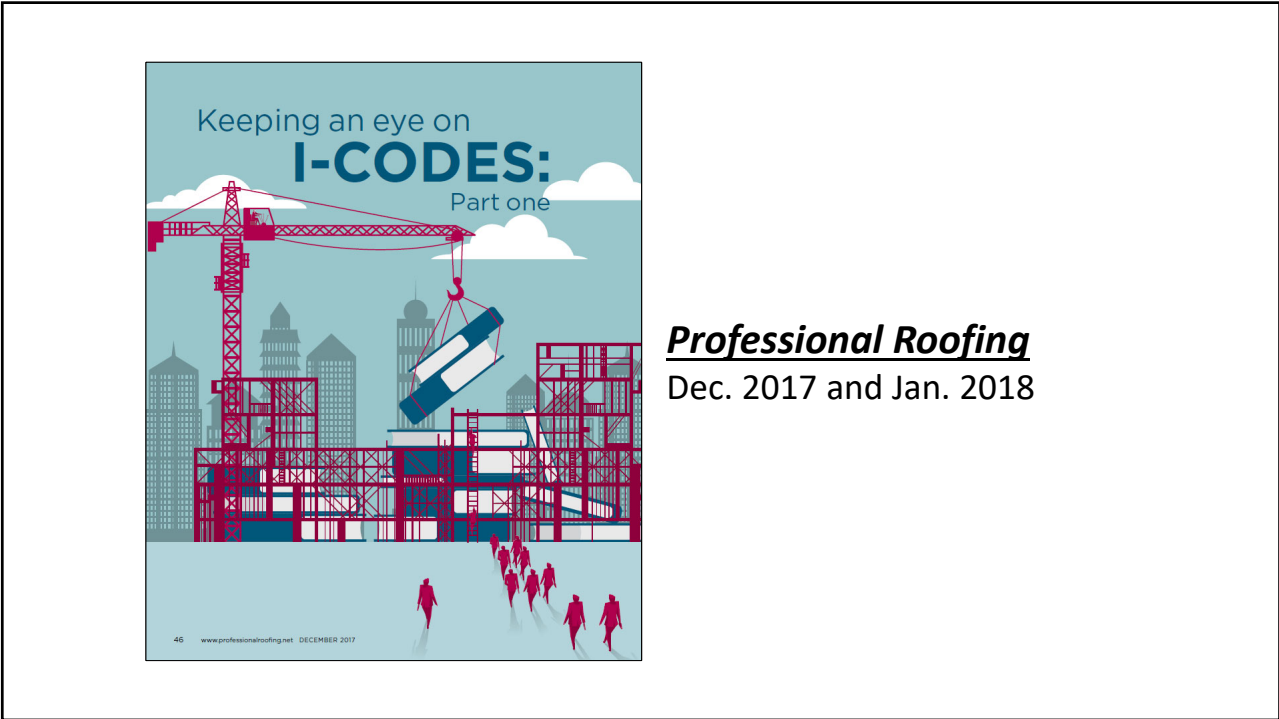
International Building Code, 2018 Edition

30



***International Energy Conservation Code,
2018 Edition (Residential Provisions)***

31

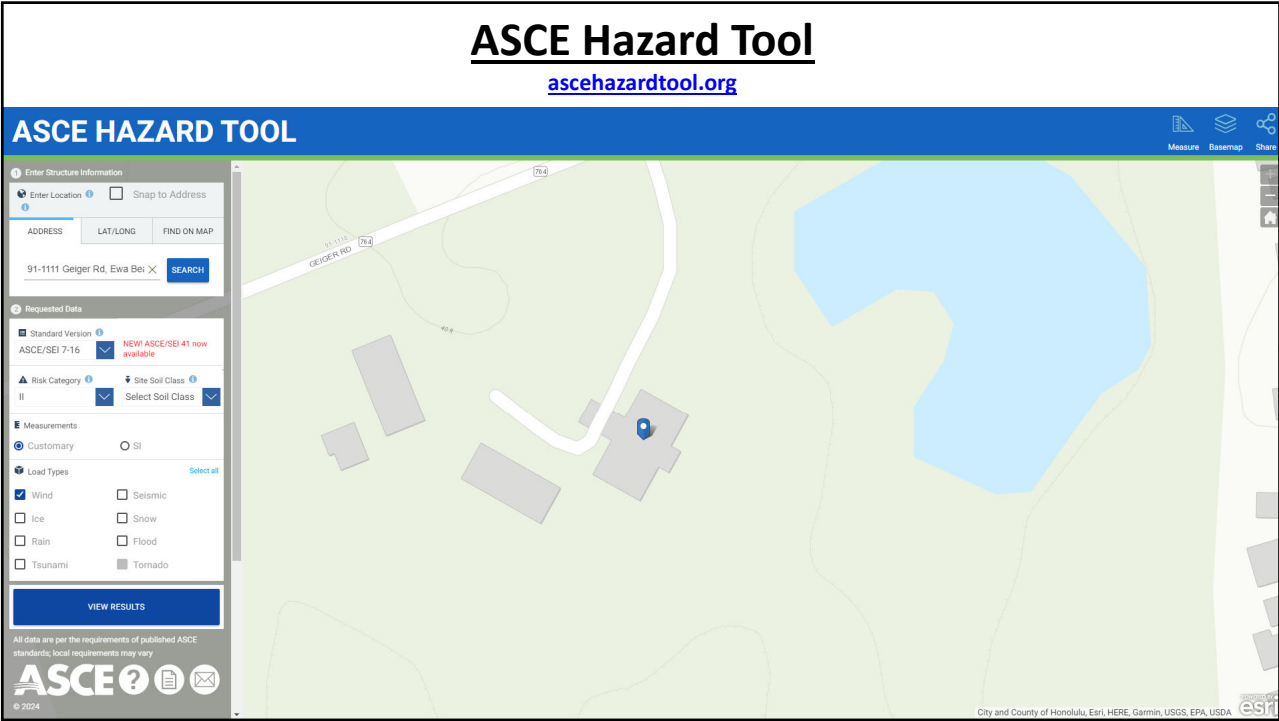


**Professional Roofing
Dec. 2017 and Jan. 2018**

32



33



34

ASCE HAZARD TOOL

Location: 91-1111 Geiger Rd, Ewa Beach, Hawaii, 96706

Elevation: 29 ft with respect to North American Vertical Datum of 1988 (NAVD 88)

Lat: 21.32943

Long: -158.031346

Standard: ASCE/SEI 7-16

Risk Category: II

Soil Class:

Wind: 131 Vmph

Special Wind Region - See Details

Buttons: FULL REPORT, SUMMARY

ASCE logo and copyright information.

Wind Details

Wind Speed	131 Vmph
10-year MRI	53 Vmph
25-year MRI	59 Vmph
50-year MRI	67 Vmph
100-year MRI	86 Vmph

Special
Special Wind Region - Mountainous terrain, gorges, and special wind regions shown in Fig. 26.5.1 shall be examined for unusual wind conditions. The Authority Having Jurisdiction shall, if necessary, adjust the values given in Fig. 26.5.1 to account for higher local wind speeds. Such adjustment shall be based on meteorological information and an estimate of the basic wind speed obtained in accordance with the provisions in Section 26.5.3.

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Data Source
ASCE/SEI 7-16, Fig. 26.5-2B and Figs. CC-21-CC-2-4, and Section 26.5.2

Map showing Geiger Rd and surrounding terrain.

Legend: Select data to display

City and County of Honolulu, Esri, HERE, Garmin, LISGS, EPA, USDA

35

Roof Wind Designer
www.roofwinddesigner.com

Navigation: WELCOME MARK GRAHAM, MY PROJECTS, PROFILE, ADMIN, LOGOUT, HOME, CONTACT, FAQ

ROOF WIND DESIGNER
ASCE 7-05, ASCE 7-10, ASCE 7-16 AND ASCE 7-22

Diagram showing wind flow over a building with an eddy and the equation: $q_h = 0.00256(K_h)(K_{zt})(K_c)(V^2)$

Roof Wind Designer is intended to provide users with an easy-to-use means for determining roof systems' design wind loads for many commonly encountered building types that are subject to building code compliance.

Design-wind loads are derived using the American Society of Civil Engineers (ASCE) Standard ASCE 7, "Minimum Design Loads for Buildings and Other Structures." This standard is a widely recognized consensus standard and is referenced in and serves as the technical basis for wind load determination in the International Building Code and NFPA 5000: Building Construction and Safety Code. Roof Wind Designer allows users to choose between ASCE 7's 2005, 2010, 2016, and 2022 editions. Roof Wind Designer uses ASCE 7-05's Method 1—Simplified Method, ASCE 7-10's Envelope Procedure, Part 2: Low-rise Buildings (Simplified) of Chapter 30, ASCE 7-16's Envelope Procedure, Part 2: Low-rise Buildings (Simplified) of Chapter 30, and Part 4: Buildings with $60ft < h \le 100ft$ (Simplified), and ASCE 7-22's Part 1: Low-rise Buildings, Part 2: Buildings with $h > 60ft$ [$h > 18.3m$], and Part 4: Building appurtenances, rooftop structures and equipment. [A more detailed explanation of ASCE 7's four editions.](#)

36

The questions...

- The International Energy Conservation Code revised for Honolulu took effect in November last year. What's in there that you need to worry about?
- We get questions routinely from contractors and manufacturer reps about when the Code applies to residential re roofing? How about when it is with the same material type or a different heavier material type?
- What's this about requirements when you expose sheathing on residential reroofing jobs and needing to do attic fans or insulation or what?

37

37

- When does the Code apply to commercial jobs? what is a commercial job v. a residential job? Condos, walk up office buildings?
- What happens if you do not follow the Code? Technically could the owner (even if they are no longer the owner) hold you responsible 10 years later and have you foot the bill to do it correctly at today's cost?
- So you think you know the Code on Oahu. How about Kauai or Maui?

38

38

Questions... and other topics

39



Mark S. Graham

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mgraham@nrca.net
www.nrca.net

Personal website: www.MarkGrahamNRCA.com

40

The screenshot shows a professional website for Mark S. Graham. At the top left, the name "Mark S. Graham" is displayed in a large, dark font, with the URL "www.marksgraham.com" underneath it. A horizontal navigation menu is located below the header, containing the following items: "Home", "About Me", "News", "Upcoming Events", "Papers and Articles", "Presentations", "Links", and "Contact". The "Presentations" link is highlighted with a red circle. Below the navigation menu is a main content area with a white background. On the left side of this area is a square portrait of Mark S. Graham, a man with glasses wearing a dark suit, white shirt, and yellow tie. To the right of the portrait is the heading "Welcome!" in a large, dark font. Below the heading is a paragraph of text: "This website is intended to allow users easy access to my curriculum vitae, news via my Twitter account, upcoming events, articles and symposium papers, past presentations, useful links and contact information." Below this paragraph is another line of text: "Additional information about my work is available on NRCA's website, www.nrca.net." At the bottom of the main content area are three blue rectangular buttons with white text: "About me", "My work", and "Contact me".

41