

ORDINANCE NO. _____

BILL NO. 15 (2023)

**A BILL FOR AN ORDINANCE REPEALING CHAPTER 16.26B,
MAUI COUNTY CODE, AND ESTABLISHING A NEW CHAPTER 16.26C,
MAUI COUNTY CODE, RELATING TO THE BUILDING CODE**

BE IT ORDAINED BY THE PEOPLE OF THE COUNTY OF MAUI:

SECTION 1. Chapter 16.26B, Maui County Code, is repealed in its entirety.

SECTION 2. The “International Building Code, 2018 Edition”, as copyrighted and published in 2017 by International Code Council, Incorporated, 500 New Jersey Avenue, 6th Floor, Washington, DC 20001, is hereby incorporated herein by reference and made a part hereof and adopted, subject to the provisions of Chapter 16.26C, Maui County Code, as hereinafter enacted and as hereafter may be amended.

SECTION 3. Title 16, Maui County Code, is amended by adding a new chapter to be appropriately designated and to read as follows:

“Chapter 16.26C

BUILDING CODE

Sections:

16.26C.202	Section 202 amended
16.26C.308.2	Subsection 308.2 amended
16.26C.310	Section 310 amended
16.26C.312	Section 312 amended
16.26C.403.6.2	Subsection 403.6.2 deleted
16.26C.406.3.3	Subsection 406.3.3 replaced
16.26C.423	Section 423 replaced
16.26C.429	Section 429 added
16.26C.430	Section 430 added
16.26C.602	Table 602 amended
16.26C.705.1	Subsection 705.1 amended
16.26C.903.2.8	Subsection 903.2.8 amended
16.26C.906	Section 906 replaced
16.26C.907	Section 907 replaced
16.26C.911	Section 911 replaced
16.26C.913	Section 913 replaced
16.26C.1009	Section 1009 deleted
16.26C.1010.1.10	Subsection 1010.1.10 amended
16.26C.1010.2	Subsection 1010.2 amended
16.26C.1100	Chapter 11 replaced
16.26C.1202.1	Subsection 1202.1 amended
16.26C.1202.3.1	Subsection 1202.3.1 added
16.26C.1202.5.2	Subsection 1202.5.2 amended
16.26C.1203	Section 1203 deleted
16.26C.1402.7	Subsection 1402.7 deleted
16.26C.1403.1	Subsection 1403.1.1 added
16.26C.1502	Section 1502 amended
16.26C.1602.1	Section 1602.1 amended
16.26C.1603.1	Subsection 1603.1 amended
16.26C.1603.1.4	Subsection 1603.1.4 amended
16.26C.1609.1.1	Subsection 1609.1.1 amended
16.26C.1609.1.1.1	Subsection 1609.1.1.1 amended
16.26C.1609.2	Subsection 1609.2 amended

16.26C.1609.2	Table 1609.2 amended
16.26C.1609.3	Subsection 1609.3 amended
16.26C.1609.3.1	Subsection 1609.3.1 amended
16.26C.1609.3	Table 1609.3.1 amended
16.26C.1609.3	Subsection 1609.3.2 added
16.26C.1609.3	Figures 1609.3.2(b) through 1609.3.2(d) added
16.26C.1609.3	Table 1609.3.2(e) added
16.26C.1609.3	Subsection 1609.3.3 added
16.26C.1609.3	Table 1609.3.3(a)(2) added
16.26C.1609.3	Table 1609.3.3(b)(2) added
16.26C.1609.4.1	Subsection 1609.4.1 amended
16.26C.1609	Figures 1609.4(b) and 1609.4(c) added
16.26C.1609.5	Subsection 1609.5.4 added
16.26C.1613.2	Table 1613.2.5(1) amended
16.26C.1613.2	Table 1613.2.5(2) amended
16.26C.1704.2	Subsection 1704.2 amended
16.26C.1704.2.1	Subsection 1704.2.1 amended
16.26C.1704.2.3	Subsection 1704.2.3 amended
16.26C.1704.2.4	Subsection 1704.2.4 amended
16.26C.1704.3	Subsection 1704.3 deleted
16.26C.1704.5	Subsection 1704.5 deleted
16.26C.1704.6	Subsection 1704.6 amended
16.26C.1705.3	Subsection 1705.3 amended
16.26C.1705.11	Subsection 1705.11 replaced
16.26C.1804.1	Subsection 1804.1 amended
16.26C.1810.3.6	Subsection 1810.3.6 amended
16.26C.1904	Subsection 1904.3 added
16.26C.1905	Subsection 1905.1.9 added
16.26C.1905	Subsection 1905.1.10 added
16.26C.1905	Subsection 1905.2 added
16.26C.2104.1	Subsection 2104.1.3 added
16.26C.2203	Subsection 2203.2 added

16.26C.2211.1.2	Subsection 2211.1.2 amended
16.26C.2302.1	Subsection 2302.1 amended
16.26C.2303.1.9	Subsection 2303.1.9 amended
16.26C.2304.6.1	Subsection 2304.6.1 amended
16.26C.2304.6	Table 2304.6.1 amended
16.26C.2304.12	Subsection 2304.12 replaced
16.26C.2308.1.1	Subsection 2308.1.1 replaced
16.26C.2308.7	Table 2308.7.5 replaced
16.26C.2800	Chapter 28 deleted
16.26C.2902.1	Subsection 2902.1 amended
16.26C.2902.2	Subsection 2902.2 amended
16.26C.3001.1	Subsection 3001.1 amended
16.26C.3102.7	Subsection 3102.7 amended
16.26C.3102	Subsection 3102.9 added
16.26C.3103	Section 3103 deleted

16.26C.100 The International Building Code incorporated. The "International Building Code, 2018 Edition", herein referred to as the "International Building Code", "Building Code", "IBC", or "this code," as copyrighted and published in 2017 by the International Code Council, Inc., 4051 West Flossmoor Road, Country Club Hills, IL 60478-5795, is incorporated by reference and made a part hereof, subject to the amendments set forth in this chapter, as enacted and as may be amended. If a subsequent edition of the International Building Code becomes an interim Building Code in accordance with the provisions of the Hawaii Revised Statutes, all replacements, amendments, additions, and deletions made in this ordinance shall remain in full force and effect, and the Authority Having Jurisdiction will determine how to

best apply those replacements, amendments, additions, and deletions to the interim code.

16.26C.101 General.

101.1 Title. These regulations shall be known as the Building Code of the County of Maui, hereinafter referred to as "this code."

101.2 Administrative and supplemental provisions. Provisions relating to scope, permitting, enforcement, inspection, and other administrative procedures and supplemental code provisions, are contained in Chapter 16.25, Building Administrative and Supplemental Provisions, which shall be considered part of this code.

16.26C.101 Chapter 1 deleted. Chapter 1 of the International Building Code is deleted in its entirety.

16.26C.202 Section 202 amended. Section 202 of the International Building Code is amended to include the following added or amended definitions:

AGRICULTURAL BUILDING. A structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products. This structure can be used for limited human occupancy and shall not

be a place of human habitation or a place of employment where agricultural products are processed, treated or packaged, nor shall it be a place used by the public.

ASSISTED LIVING FACILITIES. Buildings or parts thereof housing persons, on a 24-hour basis, who, because of age, mental disability, or other reasons, live in a supervised residential environment which provides personal care services and are licensed by the State.

BUILDING OFFICIAL. [The officer or other designated authority charged with the administration and enforcement of this code, or a duly authorized representative] The director of public works of the County of Maui, or the director's duly authorized representative.

COMMUNITY STORM SHELTER. A building, structure, or portion thereof, constructed in accordance with ICC/NSSA 500 Standard on the Design and Construction of Storm Shelters and designated for use during a severe wind storm event such as a hurricane.

CONSTRUCTION DOCUMENTS. Written, graphic and pictorial documents prepared or assembled for describing the design, location and physical characteristics of the elements of a project necessary for obtaining a building permit. Construction documents shall include but not be limited to

plans (drawings), specifications, product information, and special inspection information, as may be required by the building official.

COUNTY. The County of Maui, a political subdivision of the State of Hawaii.

COUNTY COUNCIL. The council of the County of Maui.

FIRE CODE. The fire code of the County of Maui.

FIRE CHIEF and FIRE OFFICIAL. May be used synonymously and shall mean the fire chief of the County or the fire chief's authorized representative.

NO-BUILD AREA EASEMENT. An unobstructed area on a property used to satisfy fire separation distance and other yard spacing requirements. Uncovered parking areas, slab on grade, pavement, sidewalks, utilities, lighting, and other minor structures may be allowed. A declaration of restriction, metes and bounds survey map and other information shall be recorded with the Bureau of Conveyance or identified on an approved subdivision plat.

REGISTERED DESIGN PROFESSIONAL. An [individual] architect, structural engineer, or other design professional who is registered or licensed [to practice their respective design profession as defined by the statutory

requirements of the professional registration laws of] by the state [or jurisdiction in which the project is to be constructed] and is able to perform the professional services pursuant to state and county laws, rules, procedures and policies.

STATE. The State of Hawaii.

STRUCTURAL OBSERVATION. The visual observation of the structural system by a registered design professional for general conformance to the approved construction documents. Structural observation is equivalent to “observation of construction” of the structural system, as defined in Hawaii Administrative Rules chapter 16-115, implementing Hawaii Revised Statutes chapter 464. Structural observation does not include or waive the responsibility for the inspection required by Section 1705 or other sections of this code.

WINDBORNE DEBRIS REGION. [Areas within hurricane-prone regions located:

1. Within 1 mile (1.61 km) of the coastal mean high-water line where the basic design wind speed, V , is 130 mph (58 m/s) or greater; or
2. In areas where the basic design wind speed is 140 mph (63.6 m/s) or greater.

For Risk Category II buildings and structures and Risk Category III buildings and structures, except health care facilities, the windborne debris region shall be based on Figure 1609.3.(1). For Risk Category IV buildings and structures and Risk Category III health care facilities, the windborne debris region shall be based on Figure 1609.3(2).] Areas in Hawaii where the basic design wind speed is 130 mph (63 m/s) or greater. For Risk Category II buildings and structures, the wind-borne debris region shall be based on Figure 26.5-2B of ASCE 7. For Risk Category III buildings and structures, the wind-borne debris region shall be based on Figure 26.5-2C of ASCE 7. For Risk Category IV buildings, the windborne debris region shall be based on Figure 26.5-2D of ASCE 7. The use of wind maps published by the Hawaii State Building Code Council, ASCE 7 Hazard Tool, and other approved documents may be used.

ZONING PROVISIONS. The zoning provisions set forth in title 19, Maui County Code and other laws enforced by the Department of Planning.

16.26C.308.2 Subsection 308.2 amended. Subsection 308.2 of the International Building Code is amended to read as follows:

308.2 Institutional Group I-1. Institutional Group I-1 occupancy shall include buildings, structures or portions thereof for more than 16 persons, excluding staff, who reside on a 24- hour basis in a supervised environment and receive custodial care in an assisted living facility. Buildings of Group I-1 shall

be classified as one of the occupancy conditions specified in Section 308.2.1 or 308.2.2. This group shall include, but not be limited to, the following:

Alcohol and drug centers

Assisted living facilities

Congregate care facilities

Group homes

Halfway houses

Residential board and care facilities

Social rehabilitation facilities

308.2.1 Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care who, without any assistance, are capable of responding to an emergency situation to complete building evacuation.

308.2.2 Condition 2. This occupancy condition shall include buildings in which there are any persons receiving custodial care who require limited verbal or physical assistance while responding to an emergency situation to complete building evacuation.

308.2.3 Six to 16 persons receiving custodial care. A facility housing not fewer than six and not more than 16 persons receiving custodial care shall be classified as Group R-4.

308.2.4 Five or fewer persons receiving custodial care. A facility with five or fewer persons receiving custodial care shall be classified as Group R-3 or shall comply with the International Residential Code provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or Section P2904 of the International Residential Code.

16.26C.310 Section 310 amended. Section 310 of the International Building Code is amended to read as follows:

SECTION 310 RESIDENTIAL GROUP R

310.1 Residential Group R. Residential Group R includes, among others, the use of a building or structure, or a portion thereof, for sleeping purposes when not classified as an Institutional Group I or when not regulated by the International Residential Code.

310.2 Residential Group R-1. Residential Group R-1 occupancies containing sleeping units where the occupants are primarily transient in nature, including:

Boarding houses (transient) with more than 10 occupants

Congregate living facilities (transient) with more than 10 occupants

Hotels (transient)

Motels (transient)

310.3 Residential Group R-2. Residential Group R-2 occupancies containing sleeping units or more than two dwelling units where the occupants are primarily permanent in nature, and facilities providing personal care services that have residents that are capable of self evacuation in an emergency situation, including:

Apartment houses

Congregate living facilities (nontransient) with more than 16
occupants

Boarding houses (nontransient)

Convents

Dormitories

Fraternities and sororities

Monasteries

Facilities providing personal care services (with residents that are
capable of self evacuation)

Hotels (nontransient)

Live/work units

Motels (nontransient)

Vacation timeshare properties

310.4 Residential Group R-3. Residential Group R-3 occupancies where the occupants are primarily permanent in nature and not classified as Group R-1, R-2, R-4 or I, including:

Buildings that do not contain more than two dwelling units

Care facilities that provide accommodations for five or fewer persons receiving care

Congregate living facilities (nontransient) and facilities providing personal care with 16 or fewer occupants

Boarding houses (nontransient)

Convents

Dormitories

Fraternities and sororities

Monasteries

Congregate living facilities (transient) with 10 or fewer occupants

Boarding houses (transient)

Lodging houses (transient) with five or fewer guest rooms and 10 or fewer occupants

Bed and breakfast homes and short-term rental homes as defined and permitted in title 19 shall comply with the requirements of this code or the International Residential Code.

310.4.1 Care facilities within a dwelling. Care facilities for five or fewer persons receiving care that are within a single-family dwelling are permitted to

comply with the International Residential Code provided an automatic sprinkler system is installed in accordance with Section 903.3.1.3 or Section P2904 of the International Residential Code.

310.4.2 Lodging houses. Owner-occupied lodging houses with five or fewer guest rooms and 10 or fewer total occupants shall be permitted to be constructed in accordance with the International Residential Code.

310.4.3 Bed and Breakfast Homes and Short-Term Rental Homes. Bed and breakfast homes and short-term rental homes as defined and permitted in title 19 shall comply with the requirements of the International Residential Code.

310.5 Residential Group R-4. Residential Group R-4 occupancy shall include buildings, structures or portions thereof for more than five but not more than 16 persons, excluding staff, who reside on a 24-hour basis in a supervised residential environment and receive custodial care. Buildings of Group R-4 shall be classified as one of the occupancy conditions specified in Section 310.5.1 or 310.5.2. This group shall include, but not be limited to, the following:

Alcohol and drug centers

Assisted living facilities

Congregate care facilities

Group homes

Halfway houses

Residential board and care facilities

Social rehabilitation facilities

Group R-4 occupancies shall meet the requirements for construction as defined for Group R-3, except as otherwise provided for in this code or shall comply with the International Residential Code.

310.5.1 Condition 1. This occupancy condition shall include buildings in which all persons receiving custodial care, without any assistance, are capable of responding to an emergency situation to complete building evacuation.

310.5.2 Condition 2. This occupancy condition shall include buildings in which there are any persons receiving custodial care who require limited verbal or physical assistance while responding to an emergency situation to complete building evacuation.

16.26C.312 Section 312 amended. Section 312 of the International Building Code is amended to read as follows:

SECTION 312 UTILITY AND MISCELLANEOUS GROUP U

312.1 General. Buildings and structures of an accessory character and miscellaneous structures not classified in any specific occupancy shall be constructed, equipped and maintained to conform to the requirements of this

code commensurate with the fire and life hazard incidental to their occupancy.

Group U shall include, but not be limited to, the following:

Accessory structures, as defined in the International Residential

Code

Agricultural buildings

Aircraft hangars, accessory to a one- or two-family residence (see
Section 412.4)

Barns

Carports

Communication equipment structures with a gross floor area of
less than 1,500 square feet (139 m²)

Fences [more than 6 feet (1829 mm) in height]

Grain silos, accessory to a residential occupancy

Livestock shelters

Photovoltaic structures (PV). A PV structure with a use below will
be classified to an appropriate occupancy.

Private garages

Retaining walls

Sheds

Stables

Swimming Pools and Spas

Tanks

Towers

Windmills and Wind turbines

312.1.1 Greenhouses. Greenhouses not classified as another occupancy shall be classified as Use Group U.

16.26C.403.6.2 Subsection 403.6.2 deleted. Subsection 403.6.2 of the International Building Code is deleted in its entirety.

16.26C.406.3.3 Subsection 406.3.3 replaced. Subsection 406.3.3 of the International Building Code is deleted in its entirety and replaced to read as follows:

406.3.3 Garages and carports. Carports shall be open on at least two sides. One side shall be at least 100 percent open, with 100 percent net openings on another side or which is provided with equivalent openings on 2 or more sides. Carports not meeting the opening requirements shall be considered a garage and shall comply with the provisions of this section for garages.

16.26C.423 Section 423 replaced. Section 423 of the International Building Code is deleted in its entirety and replaced with Section 423 to read as follows:

SECTION 423 COMMUNITY STORM SHELTERS

423.1 General. In addition to other applicable requirements in this code, designated earthquake, hurricane or other community storm shelters shall be constructed in accordance with ICC-500.

423.1.1 Scope. This section applies to the construction of storm shelters constructed as separate detached buildings or constructed as safe rooms within buildings for the purpose of providing safe refuge from storms that produce high winds, such as hurricanes. Such structures shall be designated to be hurricane shelters.

16.26C.429 Section 429 added. Section 429 of the International Building Code is amended by adding Section 429 to read as follows:

SECTION 429 HAWAII RESIDENTIAL SAFE ROOM

429.1 Performance-based design criteria. The residential safe room shall meet the minimum performance specifications of Sections 429.1.1 through 429.10.

429.1 Intent and scope. The intent of the residential safe room is to temporarily provide an enhanced protection area, fully enclosed within a dwelling

or within an accessory structure to a residence, which is designed and constructed to withstand the wind pressures, windborne debris impacts, and other requirements of this section.

429.1.2 Alternative standards.

1. **Manufactured safe room designs subject to approval.** A manufactured safe room or safe room kit may be substituted if documentation is submitted and approved by the building official. The safe room shall be engineered, tested, and manufactured to meet or exceed the criteria of this section.
2. **FEMA in-residence shelter designs permitted.** It shall be permissible to build FEMA In-Residence Shelters of up to 64 square feet of floor area with walls up to 8 feet long that are built in accordance with construction details of FEMA 320.

429.2 Site criteria. Residential safe rooms shall not be constructed within areas subject to stream flooding, coastal flooding or dam failure inundation within any of the following areas:

1. FEMA Special Flood Hazard Areas (SFHA) subject to rainfall runoff flooding or stream or flash flooding;

2. Coastal zones “V” or “A” identified in the Flood Insurance Rate Map (FIRM) issued by FEMA for floodplain management purposes, in which the flood hazard are tides, storm surge, waves, tsunamis, or a combination of these hazards;
3. Areas subject to dam failure inundation as determined by the Department of Land and Natural Resources.

429.3 Size of safe room. The safe room shall be designed to provide a minimum of 15 square feet per person in a room which does not need to exceed 120 square feet (11 m²) of floor area.

429.4 Provisions for exiting. The safe room shall be equipped with an inward-swinging interior door and an impact-protected operable window or exterior door suitable for a means of alternative exiting in an emergency.

429.5 Design for dead, live, wind, rain, and impact loads.

429.5.1 Structural integrity criteria.

1. The residential safe room shall be built with a complete structural system and a complete load path for vertical and lateral loads caused by gravity and wind.

2. The building that the residential safe room is in shall be assumed to be destroyed by the storm and shall not be taken as offering any protective shielding to the safe room enclosure.
3. The ceiling structure and wall shall be capable of supporting a superimposed debris load of the full weight of any building floors and roof above, but not less than 125 psf.
4. The residential safe room enclosure shall be capable of simultaneously resisting lateral and uplift wind pressures corresponding to a 145 mph 3-second peak gust ultimate design wind speed, determined in accordance with ASCE 7, Minimum Design Loads for Buildings and Other Structures. The site exposure factor shall be based on exposure C or the exposure shown in Figure 1609.4, whichever is the greater. The values for the gust factor and the directionality factor shall be taken as 0.85. Topographic wind amplification caused by mountainous terrain shall be considered in accordance with the building code. Internal pressure shall be determined in accordance with ASCE 7.
5. The residential safe room shall be anchored to a foundation system capable of resisting the above loading conditions.

429.5.2 Windborne debris impact protection of building enclosure elements. The entire enclosure of the safe room, including all walls, ceilings,

and openings, fixed or operable windows, and all entry doors into the safe room, shall meet or exceed Level D requirements of ASTM E 1996 (Table 422.5-1), or be an approved assembly listed in Section 430.5.4. Any wall or ceiling penetration greater than 4 square inches shall be considered an opening.

Exception: Electrical outlet boxes and interior lighting switches not penetrating more than 2.5-inches into the interior wall surface and a plumbing piping or conduit not greater than 1.5-inch in diameter shall be exempted from this requirement.

429.5.3 Cyclic pressure loading of glazing and protective systems.

Impact protective systems shall meet the ASTM E 1996 cyclic pressure requirement for the loading given in Table 430.5-1.

Table 429.5-1
Windborne Debris Protection and Cyclic Pressure Criteria for Residential Safe Rooms

ASTM E 1996 Missile Level Rating	Debris Missile Size	Debris Impact Speed	Enclosure Wall Ceiling, and Floor Cyclic Air Pressure Testing - maximum inward and maximum outward pressures
D	2 x 4 weighing 9.0 lb. +/- 0.25 lb., and with min. length 8 +/- 4-inch	50 ft/sec or at least 34 mph	35 psf inward 45 psf outward

429.5.4 Approved Debris Impact Resistant Wall Assemblies. The following methods of wall assembly construction shall be deemed to comply with Section 429.5.2:

1. 3/4-inch plywood on wood studs spaced at 16 inches on-center with #8 X 3 inch wood screws at 6 inches on-center.
2. 3/4-inch plywood attached to double studs spaced at 16 inches on-center with #8 X 3 inch wood screws at 6 inches on-center.
3. 8-1/4 inch cementitious lap siding over 22 gage sheet metal attached to 350S-162-33 studs spaced at 24 inches on-center.
4. 8-1/4 inch cementitious lap siding attached to 350S-162-33 studs spaced at 24 inches on-center studs with interior 3/4-inch interior plywood sheathing.
5. 8-1/4 inch cementitious lap siding attached to 350S-162-33 studs spaced at 24 inches on-center with 1/2-inch interior 22 gage sheet metal composite gypsum wallboard.
6. 8-1/4 inch cementitious lap siding attached to 2 inch X 4 inch wood studs spaced at 16 inches on-center with 1/2-inch interior 22 gage sheet metal composite gypsum wallboard.
7. 8-1/4 inch cementitious lap siding attached to 2 inch X 4 inch wood studs spaced at 16 inches on-center with 22 gage sheet metal and 1/2-inch interior gypsum wallboard.

8. Cementitious lap siding attached to 5/8-inch structural plywood on 2 inch X 4 inch wood studs spaced at 16 inches on-center.
9. Cementitious-panel siding attached to 5/8-inch structural plywood on 2 inch X 4 inch or 362S-137-43 steel studs spaced at 16 inches on-center.
10. EFS with 1/2-inch dens-glass gold exterior sheathing on 362S-137-43 steel studs spaced at 16 inches on-center and 1/2-inch interior gypsum wallboard.
11. 24 gage steel sheet (50 ksi) on girts.
12. Concrete with a thickness of 4 inches with reinforcing.
13. Concrete masonry units with a thickness of 6 inches with partial grouting and reinforcing spaced at 24 inches on-center.
14. Concrete masonry units with a thickness of 8 inches with partial grouting and reinforcing spaced at 24 inches on-center.
15. Interior or exterior wall with laterally braced 2 inch x 4 inch wood studs with sheathing on either side of 22 gage sheet metal.

Sheathing shall be attached to studs with fasteners at 6 inches (152 mm) on center for edge and field fastening.

429.6 Ventilation. The residential safe room shall be naturally ventilated to allow the enclosure to have approximately one air change every two hours. This requirement may be satisfied by 12 square inches of venting per occupant. There shall be at least two operable vents. The vents shall be protected by a cowling or other device that shall be impact tested to comply with ASTM E 1996-14 Level D. Alternatively, the room shall be evaluated to determine if the openings are of sufficient area to constitute an open or partially enclosed condition as defined in ASCE 7.

429.7 Communications. The residential safe room shall be equipped with a phone line and telephone that does not rely on a separate electrical power outlet. Alternatively, a wireless telephone shall be permitted to rely on an Uninterruptible Power Supply (UPS) battery device.

429.8 Construction documents. Construction documents for the residential safe room shall be directly prepared by a Hawaii licensed professional structural engineer.

429.9 Special inspection. The construction or installation of the residential safe room shall be verified for conformance to the drawings in accordance with the appropriate requirements of Chapter 17.

429.10 Notification. The owner of the safe room shall notify the state department of defense and county civil defense agency of the property's tax map key or global positioning system coordinates.

16.26C.430 Section 430 added. Section 430 of the International Building Code is amended by adding Section 430 to read as follows:

SECTION 430

STATE AND COUNTY OWNED HIGH OCCUPANCY BUILDINGS DESIGN

CRITERIA FOR ENHANCED HURRICANE PROTECTION AREAS

430.1 Intent. The purpose of this section is to establish minimum life safety design criteria for enhanced hurricane protection areas in high occupancy state- and county- owned buildings occupied during hurricanes of up to Saffir Simpson Category 3.

430.2 Scope. This section shall apply to state- and county-owned buildings which are of occupancy category III and IV defined by Table 1604.5 and of the following specific occupancies:

- 1. Enclosed and partially enclosed structures whose primary occupancy is public assembly with an occupant load greater than 300.**

2. Health care facilities with an occupant load of 50 or more resident patients, but not having surgery or emergency treatment facilities.
3. Any other state- and county-owned enclosed or partially enclosed building with an occupant load greater than 5,000.
4. Hospitals and other health care facilities having surgery or emergency treatment facilities.

Exception: Facilities located within flood zone V and flood zone A that are designated by the owner to be evacuated during hurricane warnings declared by the National Weather Service, shall not be subject to these requirements.

430.3 Site Criteria

430.3.1 Flood zones. Comply with ASCE 24-14, Flood Resistant Design and Construction, based on provisions for Risk Category III.

1. Floor slab on grade shall be 1.5 foot above the base flood elevation of the county's flood hazard map, or a higher elevation as determined by a modeling methodology that predicts the maximum envelope and depth of inundation including the combined effects of storm surge and wave actions with respect to a Category 3 hurricane, nor

less than the flood elevation associated with a 500-year mean recurrence interval.

2. Locate outside of V and Coastal A flood zones unless justified by site-specific analysis or designed for vertical evacuation in accordance with a method approved by the building official. When a building within a V or Coastal A flood zone is approved, the bottom of the lowest structural framing member of any elevated first floor space shall be 2 feet above the base flood elevation of the county's flood hazard map, or at higher elevation as determined by a modeling methodology that predicts the maximum envelope and depth of inundation including the combined effects of storm surge and wave actions with respect to a Category 3 hurricane, nor less than the flood elevation associated with a 500-year mean recurrence interval.

430.3.2 Emergency vehicle access. Provide at least one route for emergency vehicle access. The portion of the emergency route within the site shall be above the 100-year flood elevation.

430.3.3 Landscaping and utility laydown impact hazards. Landscaping around the building shall be designed to provide standoff separation sufficient to maintain emergency vehicle access in the event of mature tree blowdown. Trees shall not interfere with the functioning of overhead or underground utility lines, nor cause laydown or falling impact hazard to the building envelope or utility lines.

430.3.4 Adjacent buildings. The building shall not be located within 1,000 feet of any hazardous material facilities defined by Table 1604.5. Unanchored light-framed portable structures shall be not permitted within 300 feet of the building, unless the windborne debris hazard of the portable structure uplift is mitigated.

430.4 Enhanced hurricane protection area program requirements.

430.4.1 Applicable Net Area. At least fifty percent of the net square feet of a facility shall be constructed to qualify as an enhanced hurricane protection area. The net floor area shall be determined by subtracting from the gross square feet the floor area of excluded spaces, exterior walls, columns, fixed or movable objects, equipment or other features that under probable conditions cannot be removed or stored during use as a storm shelter.

430.4.2 Excluded spaces. Spaces such as mechanical and electrical rooms, storage rooms, attic and crawl spaces, shall not be considered as net floor area permitted to be occupied during a hurricane.

430.4.3 Occupancy Capacity. The occupancy capacity shall be determined by dividing the net area of the enhanced hurricane protection area by 15 square feet net floor area per person.

430.4.4 Toilets and hand washing facilities. Toilet and hand washing facilities shall be located and accessible from within the perimeter of the enhanced hurricane protection area.

430.4.5 Accessibility. Where the refuge occupancy accommodates more than 50 persons, provide an ADA-accessible route to a shelter area at each facility with a minimum of 1 wheelchair space for every 200 enhanced hurricane protection area occupants determined per section 430.4.3.

430.5 Design wind, rain, and impact loads.

430.5.1 Structural design criteria. The building main wind force resisting system and structural components shall be designed per ASCE 7 for a 115 mph minimum peak 3-second gust design speed with a load factor of 1.6, and an importance factor for occupancy category III. Topographic and directionality factors shall be the site-specific values determined per Appendix W. Design for interior pressure based on the largest opening in any exterior facade or roof surface.

430.5.2 Windborne debris missile impact for building enclosure elements. Exterior glazing and glazed openings, louvers, roof openings and doors shall be provided with windborne debris impact resistance or protection systems conforming to ASTM E1996-05 level D, i.e., 9 lb. 2 X 4 @ 50 fps (34 mph).

430.5.3 Cyclic pressure loading of impact resistive glazing or windborne impact protective systems. Resistance to the calculated maximum inward and outward pressure shall be designed to conform to ASTM E1996-14.

430.5.4 Windows. All unprotected window assemblies and their anchoring systems shall be designed and installed to meet the wind load and missile impact criteria of this section.

430.5.5 Window protective systems. Windows may be provided with permanent or deployable protective systems, provided the protective system is designed and installed to meet the wind load and missile impact criteria and completely covers the window assembly and anchoring system.

430.5.6 Doors. All exterior and interior doors subject to possible wind exposure and/or missile impact shall have doors, frames, anchoring devices, and vision panels designed and installed to resist the wind load and missile impact criteria or such doors, frames, anchoring devices, and vision panels shall be provided with impact protective systems designed and installed to resist the wind load and missile impact criteria of this section.

430.5.7 Exterior envelope. The building enclosure, including walls, roofs, glazed openings, louvers and doors, shall not be perforated or penetrated by windborne debris, as determined by compliance with ASTM E1996-14 Level D.

430.5.8 Parapets. Parapets shall satisfy the wind load and missile impact criteria of the exterior envelope.

430.5.9 Roofs

430.5.9.1 Roof openings. Roof openings (e.g., HVAC fans, ducts, skylights) shall be provided with protection for the wind load and missile impact criteria of Sections 430.5.2 and 430.5.3 of this code.

430.5.9.2 High wind roof coverings. Roof coverings shall be specified and designed according to the latest ASTM Standards for high wind uplift forces and Section 1507, whichever is the greater.

430.5.9.3 Roof drainage. Roofs shall have adequate slope, drains and overflow drains or scuppers sized to accommodate 100-year hourly rainfall rates in accordance with section 1611.1, but not less than 2-inches per hour for 6 continuous hours.

430.6 Ventilation

430.6.1 Mechanical ventilation. Mechanical ventilation as required per the International Mechanical Code. Air intakes and exhausts shall be designed

and installed to meet the wind load and missile impact criteria of sections 430.5.2 and 430.5.3.

430.6.2 HVAC equipment anchorage. HVAC equipment mounted on roofs and anchoring systems shall be designed and installed to meet the wind load criteria. Roof openings for roof-mounted HVAC equipment shall have a 12-inch-high curb designed to prevent the entry of rain water.

430.7 Standby electrical system capability. Provide a standby emergency electrical power system per chapter 27 and NFPA 70 Article 700 Emergency Systems and Article 701 Legally Required Standby Systems, which shall have the capability of being connected to an emergency generator or other temporary power source. The emergency system capabilities shall include:

1. An emergency lighting system,
2. Illuminated exit signs,
3. Fire protection system(s), alarm and sprinkler, and
4. Minimum mechanical ventilation for health/safety purposes.

430.7.1 Emergency Generator. When emergency generators are pre-installed, the facility housing the generator, permanent or portable, shall be an enclosed area designed to protect the generators from wind and missile impact.

Generators hardened by the manufacturer to withstand the area's design wind and missile impact criteria shall be exempt from the enclosed area criteria requirement.

430.8 Quality assurance

430.8.1 Information on construction documents. Construction documents shall include design criteria, the occupancy capacity of the enhanced hurricane protective area, and project specifications shall include opening protection devices. Floor plans shall indicate all enhanced hurricane protection area portions of the facility and exiting routes there from. The latitude and longitude coordinates of the building shall be recorded on the construction documents.

430.8.2. Special inspection. In addition to the requirements of chapter 17, special inspections shall include at least the following systems and components:

1. Roof cladding and roof framing connections.

2. Wall connections to roof and floor diaphragms and framing.
3. Roof and floor diaphragm systems, including collectors, drag struts and boundary elements.
4. Vertical windforce-resisting systems, including braced frames, moment frames and shear walls.
5. Windforce-resisting system connections to the foundation.
6. Fabrication and installation of systems or components required to meet the impact-resistance requirements of section 1609.1.2 of this code.

Exception: Fabrication of manufactured systems or components that have a label indicating compliance with the wind-load and impact-resistance requirements of this code.

430.8.3 Quality assurance plan. A construction quality assurance program shall be included in the construction documents, including:

1. The materials, systems, components and work required to have special inspection or testing by the building official or by the registered design professional responsible for each portion of the work.
2. The type and extent of each special inspection.
3. The type and extent of each test.

4. Additional requirements for special inspection or testing for seismic or wind resistance.

5. For each type of special inspection, identification as to whether it will be continuous special inspection or periodic special inspection.

430.8.4 Peer Review. Construction documents shall be independently reviewed by a Hawaii-licensed structural engineer. A written opinion report of compliance shall be submitted to State Civil Defense, the building official, and the owner.

430.9 Maintenance. The building shall be periodically inspected every three years and maintained by the owner to ensure structural integrity and compliance with this section. A report of inspection shall be furnished to State Civil Defense.

430.10 Compliance re-certification when altered, deteriorated, or damaged. Alterations shall be reviewed by a Hawaii-licensed structural engineer to determine whether any alterations would cause a violation of this section. Deterioration or damage to any component of the building shall require an

evaluation by a Hawaii-licensed structural engineer to determine repairs necessary to maintain compliance with this section.

16.26C.602 Table 602 amended. Table 602 of the International

Building Code is amended to read as follows:

TABLE 602
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE^{a, d, g}

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H ^e	OCCUPANCY GROUP F-1, M, S-1 ^f	OCCUPANCY GROUP A, B, E ^j , F-2, I, R ⁱ , S-2, U ^h
X < 5 ^b	All	3	2	1
5 ≤ X < 10	IA	3	2	1
	Others	2	1	1
10 ≤ X < 30	IA, IB	2	1	1 ^c
	IIB, VB	1	0	0
	Others	1	1	1 ^c
X ≥ 30	All	0	0	0

For SI: 1 foot = 304.8 mm.

a. Load-bearing exterior walls shall also comply with the fire-resistance rating requirements of Table 601.

b. See Section 706.1.1 for party walls.

c. Open parking garages complying with Section 406 shall not be required to have a fire-resistance rating.

d. The fire-resistance rating of an exterior wall is determined based upon the fire separation distance of the exterior wall and the story in which the wall is located.

e. For special requirements for Group H occupancies, see Section 415.6.

f. For special requirements for Group S aircraft hangars, see Section 412.3.1.

g. Where Table 705.8 permits nonbearing exterior walls with unlimited area of unprotected openings, the required fire-resistance rating for the exterior walls is 0 hours.

h. For a building containing only a Group U occupancy private garage or carport, the exterior wall shall not be required to have a fire-resistance rating where the fire separation distance is 5 feet (1523 mm) or greater.

i. For a Group R-3 building of Type II-B or Type V-B construction, the exterior wall shall not be required to have a fire-resistance rating where the fire separation distance is 5 feet (1523 mm) or greater.

j. Group E occupancy used for daycare purposes having an occupant load of less than 20 may have exterior wall and opening protection as required in the IRC (Table R302.1).

16.26C.705.1 Subsection 705.1 amended. Subsection 705.1 of the

International Building Code is amended to read as follows:

704.1 General. Exterior walls shall comply with this section.

Exceptions:

1. Lot lines established pursuant to R-0 zero lot line provisions in Title 19, Maui County Code;
2. Condominium ownership purposes;
3. Interior lot lines in retail shopping malls; or
4. No building easements.
5. Lands owned by the State of Hawaii and County of Maui with building official approval.

16.26C.903.2.8 Subsection 903.2.8 amended. Subsection 903.2.8 of the International Building Code is amended to read as follows:

903.2.8 Group R. An automatic sprinkler system installed in accordance with Section 903.3 shall be provided throughout all buildings with a Group R fire area.

Exception: Automatic fire sprinklers are not required pursuant to Section 46-19.8, Hawaii Revised Statutes.

16.26C.906 Section 906 replaced. Section 906 of the International Building Code International Building Code is deleted in its entirety and replaced with the following:

906.1 Where Required. Portable fire extinguishers must be installed and maintained pursuant to the Maui County Fire Code.

16.26C.907 Section 907 replaced. Section 907 of the International Building Code is deleted in its entirety and replaced with the following:

907.1 General. Fire alarm and detection systems must be installed and maintained pursuant to the Maui County Fire Code.

16.26C.911 Section 911 replaced. Section 911 of the International Building Code is deleted in its entirety and replaced with the following:

911.1 General. Where required by other sections of this code, a fire command center for fire department operations shall be provided and shall comply with the Maui County Fire Code.

16.26C.913 Section 913 replaced. Section 913 of the International Building Code is deleted in its entirety and replaced to read as follows:

913.1 General. Fire pumps must be installed and maintained pursuant to the Maui County Fire Code.

16.26C.1009 Section 1009 deleted. Section 1009 of the International Building Code is deleted in its entirety.

16.26C.1010.1.10 Subsection 1010.1.10 amended. Section 1010.1.10 of the International Building Code is amended to read as follows:

1010.1.10 Panic and fire exit hardware. Swinging doors serving a Group H occupancy and swinging doors serving rooms or spaces with an occupant load of 50 or more in a Group A or E occupancy shall not be provided with a latch or lock other than panic hardware or fire exit hardware.

Exceptions:

1. A main exit of a Group A occupancy shall be permitted to have locking devices in accordance with Section 1010.1.9.4, Item 2.
2. Doors provided with panic hardware or fire exit hardware and serving a Group A or E occupancy shall be permitted to be electrically locked in accordance with Section 1010.1.9.9 or 1010.1.9.10.
3. Double-acting screen doors used in conjunction with exit doors having panic hardware in school cafeteriums.

Electrical rooms with equipment rated 1,200 amperes or more and over 6 feet (1829 mm) wide, and that contain overcurrent devices, switching devices

or control devices with exit or exit access doors, shall be equipped with panic hardware or fire exit hardware. The doors shall swing in the direction of egress travel.

1010.1.10.1 Installation. Where panic or fire exit hardware is installed, it shall comply with the following:

1. Panic hardware shall be listed in accordance with UL 305.
2. Fire exit hardware shall be listed in accordance with UL 10C and UL 305.
3. The actuating portion of the releasing device shall extend not less than one-half of the door leaf width.
4. The maximum unlatching force shall not exceed 15 pounds (67 N).

1010.1.10.2 Balanced doors. If balanced doors are used and panic hardware is required, the panic hardware shall be the push-pad type and the pad shall not extend more than one-half the width of the door measured from the latch side.

16.26C.1010.2 Subsection 1010.2 amended. Section 1010.2 of the International Building Code is amended to read as follows:

1010.2 Gates. Gates serving the means of egress system shall comply with the requirements of this section. Gates used as a component in a means of egress shall conform to the applicable requirements for doors.

Exception: 1. Horizontal sliding or swinging gates exceeding the 4-foot (1219 mm) maximum leaf width limitation are permitted in fences and walls surrounding a stadium.

2. Security gates maybe permitted across corridors or passageways in school buildings if there is a readily visible durable sign on or adjacent to the gate, stating “THIS GATE IS TO REMAIN SECURED IN THE OPEN POSITION WHENEVER THIS BUILDING IS IN USE.”The sign shall be in letters not less than one inch high on a contrasting background. The use of this exception may be revoked by the building official for due caused.

1010.2.1 Stadiums. Panic hardware is not required on gates surrounding stadiums where such gates are under constant immediate supervision while the public is present, and where safe dispersal areas based on 3 square feet (0.28 m²) per occupant are located between the fence and enclosed space. Such required safe dispersal areas shall not be located less than 50 feet (15 240 mm) from the enclosed space. See Section 1028.5 for

means of egress from safe dispersal areas.

16.26C.1100 Chapter 11 replaced. Chapter 11 of the International Building Code is deleted in its entirety and replaced with the following:

CHAPTER 11

ACCESSIBILITY

1101.1 Scope. Buildings or portions of buildings shall be accessible to persons with disabilities in accordance with the following regulations:

1. For construction of buildings or facilities of the state and county governments, compliance with section 103-50 hrs, administered by the Disability and Communication Access Board, State of Hawaii.
2. Department of Justice's Americans with Disabilities Act Standards for Accessible Design.
3. Housing and urban development recognized "safe harbors" for compliance with the Fair Housing Acts design and construction requirements.
4. Other pertinent laws relating with disabilities shall be administered and enforced by agencies responsible for their enforcement.

Prior to the issuance of a building permit, the owner (or the owner's representative, professional architect, or engineer) shall submit a statement

that all requirements, relating to accessibility for persons with disabilities, shall be complied with.

16.26C.1202.1 Subsection 1202.1 amended. Subsection 1202.1 of the International Building Code is amended to read as follows:

1202.1 General. Buildings shall be provided with natural ventilation in accordance with Section 1202.5, or mechanical ventilation in accordance with the [International Mechanical Code] Administrative Rules of the State Department of Health.

[Where the air infiltration rate in a dwelling unit is less than 5 air changes per hour where tested with a blower door at a pressure 0.2 inch w.c. (50 Pa) in accordance with Section R402.4.1.2 of the International Energy Conservation Code— Residential Provisions, the dwelling unit shall be ventilated by mechanical means in accordance with Section 403 of the International Mechanical Code. Ambulatory care facilities and Group I-2 occupancies shall be ventilated by mechanical means in accordance with Section 407 of the International Mechanical Code.]

16.26C.1202.3 Subsection 1202.3.1 added. Subsection 1202.3 of the International Building Code is amended by adding Subsection 1202.3.1 to read as follows:

1202.3.1 Unvented Attic Spaces. The attic space shall be permitted to be unvented when the design professional determines it would be beneficial to eliminate ventilation openings to reduce salt-laden air and maintain relative humidity 60% or lower to:

1. Avoid corrosion to steel components,
2. Avoid moisture condensation in the attic space, or
3. Minimize energy consumption for air conditioning or ventilation by maintaining satisfactory space conditions in both the attic and occupied space below.

16.26C.1202.5.2 Subsection 1202.5.2 amended. Subsection 1202.5.2 of the International Building Code is amended to read as follows:

1202.5.2 Contaminants exhausted. Contaminant sources in naturally ventilated spaces shall be removed in accordance with the [International Mechanical Code and the International Fire Code] Administrative Rules of the State Department of Health and the Maui County Fire Code, as amended.

16.26C.1203 Section 1203. Section 1203 of the International Building Code is deleted in its entirety.

16.26C.1402.7 Subsection 1402.7 deleted. Subsection 1402.7 of the International Building Code is deleted in its entirety.

16.26C.1403.1 Subsection 1403.1.1 added. Subsection 1403.1 of the International Building Code is amended by adding Subsection 1403.1.1 to read as follows:

1403.1.1 Thatched material. Thatched material on the exterior of buildings, including the roof, shall be permitted only for buildings used primarily for exhibit or demonstration purposes and for booths that are less than 100 square feet used primarily for retail sales or distribution of information.

The thatched material permitted in this section may only be used for decorative purposes on the roof or wall of buildings. The entire building, except for the thatched material, shall comply with all applicable provisions of the building code.

When thatched material is used as permitted in this section, sprinkler systems and standpipes shall be provided pursuant to the Maui County Fire Code.

16.26C.1502 Section 1502 amended. Section 1502 of the International Building Code is amended by adding new subsections 1502.5 Slope and 1502.6 Roof Drains to read as follows:

1502.5 Slope. Roof shall be sloped a minimum of 1 unit vertical in 48 units horizontal (2 per cent slope) for drainage unless designed for water accumulation in accordance with Section 1611. Leaders, conductors, and storm drains shall be sized on the basis of Figure 1611.1 and the Plumbing Code.

1502.6 Roof drains. Unless roofs are sloped to drain over the roof edges, roof drains shall be installed at each low point of the roof.

16.26C.1602.1 Subsection 1602.1 amended. Subsection 1602.1 of the International Building Code is amended to read as follows:

1602.1 Notations. The following notations are used in this chapter:

D = Dead load.

D_i = Weight of ice in accordance with Chapter 10 of ASCE 7.

E = Combined effect of horizontal and vertical earthquake induced forces as defined in Section 2.3.6 of ASCE 7.

F = Load due to fluids with well-defined pressures and maximum heights.

F_a = Flood load in accordance with Chapter 5 of ASCE 7.

H = Load due to lateral earth pressures, ground water pressure or pressure of bulk materials.

L = Roof live load greater than 20 psf (0.96 kN/m²) and floor live load.

L_r = Roof live load of 20 psf (0.96 kN/m²) or less.

R = Rain load.

S = Snow load.

T = Cumulative effects of self-straining load forces and effects.

V_{asd} = Allowable stress design wind speed, miles per hour (mph) (km/hr) where applicable.

$V_{eff-asd}$ = Effective allowable stress design wind speed, miles per hour (mph) (km/hr) where applicable, calculated per Section 1609.3.1, that includes the effect of the special Hawaii factors for topographic effects and directionality.

V = Basic design wind speeds, miles per hour (mph) (km/hr) determined from Figures [1609.3(1) through 1609.3(8)] 26.5-2A through 26.5-2D of ASCE 7 for the Risk Category, applied to the strength design of the structure. The use of wind maps published by the Hawaii State Building Code Council, ASCE 7 Hazard Tool, and other approved documents may be used.

V_{unt} = Ultimate design wind speed miles per hour, (mph) (km/hr), of the region prior to any pressure calculation adjustments of topographic effects per Section 1609.3.2 or directionality effects per Section

1609.3.3.

W = Load due to wind pressure.

W_i = Wind-on-ice in accordance with Chapter 10 of ASCE 7.

16.26C.1603.1 Subsection 1603.1 amended. Subsection 1603.1 of the International Building Code is amended to read as follows:

1603.1 General. Construction documents shall show the size, section and relative locations of structural members with floor levels, column centers and offsets dimensioned. The design loads and other information pertinent to the structural design required by Sections 1603.1.1 through 1603.1.9 shall be indicated on the construction documents.

Exception: Construction documents for buildings constructed in accordance with the conventional light-frame construction provisions of Section 2308 shall indicate the following structural design information:

1. Floor and roof dead and live loads.
2. Ground snow load, P_g .
3. Basic design wind speed, V , miles per hour (mph) (km/hr) and allowable stress design wind speed, $[V_{asd}]$, $V_{eff-asd}$ as determined in accordance with Section 1609.3.1 and wind exposure.

4. [Seismic design category and site class.] Design spectral response acceleration parameters, SDS and SD1.
5. [Flood design data, if located in flood hazard areas established in Section 1612.3.] Seismic design category and site class.
6. [Design load-bearing values of soils.] Flood design data, if located in flood hazard areas.
7. [Rain load data.] Design load-bearing values of soils.
8. Rain load data.

16.26C.1603.1.4 Subsection 1603.1.4 amended. Subsection

1603.1.4 of the International Building Code is amended to read as follows:

1603.1.4 Wind design data. The following information related to wind loads shall be shown, regardless of whether wind loads govern the design of the lateral force-resisting system of the structure:

1. Basic design wind speed, V , miles per hour and allowable stress design wind speed, $[V_{asd}]$ $V_{eff-asd}$, as determined in accordance with Section 1609.3.1.
2. Risk category.
3. Wind exposure. Applicable wind direction if more than one wind exposure is utilized.
4. Applicable internal pressure coefficient.

5. Design wind pressures to be used for exterior component and cladding materials not specifically designed by the registered design professional responsible for the design of the structure, psf (kN/m²).

16.26C.1609.1.1 Subsection 1609.1.1 amended. Subsection

1609.1.1 of the International Building Code is amended to read as follows:

1609.1.1 Determination of wind loads. Wind loads on every building or structure shall be determined in accordance with Chapters 26 to 30 of ASCE 7. Minimum values for Directionality factor, K_d , Velocity Pressure Exposure Coefficient, K_z , and Topographic Factor, K_{zt} , shall be determined in accordance with Section 1609. The type of opening protection required, the basic design wind speed, V , and the exposure category for a site is permitted to be determined in accordance with Section 1609 or ASCE 7. Wind shall be assumed to come from any horizontal direction and wind pressures shall be assumed to act normal to the surface considered.

Exceptions:

1. Subject to the limitations of Section 1609.1.1.1, the provisions of ICC 600 shall be permitted for applicable Group R-2 and R-3 buildings.
2. Subject to the limitations of Section 1609.1.1.1, residential structures using the provisions of AWC WFCM.

3. Subject to the limitations of Section 1609.1.1.1, residential structures using the provisions of AISI S230.
4. Designs using NAAMM FP 1001.
5. Designs using TIA-222 for antenna-supporting structures and antennas, provided that the horizontal extent of Topographic Category 2 escarpments in Section 2.6.6.2 of TIA-222 shall be 16 times the height of the escarpment.
6. Wind tunnel tests in accordance with ASCE 49 and Sections 31.4 and 31.5 of ASCE 7.

The wind speeds in Figures [1609.3(1) through 1609.3(8)] 26.5-2A through 26.2-2D of ASCE 7 are basic design wind speeds, V , and shall be converted in accordance with Section 1609.3.1 to allowable stress design wind speeds, $[V_{asd}]$ $V_{eff-asd}$, when the provisions of the standards referenced in Exceptions 4 and 5 are used.

16.26C.1609.1.1.1 Subsection 1609.1.1.1 amended. Subsection 1609.1.1.1 of the International Building Code is amended to read as follows:

1609.1.1.1 Applicability. The provisions of ICC 600 are applicable only to buildings located within Exposure B or C as defined in Section 1609.4. [The provisions of ICC 600, AWC WFCM and AISI S230 shall not apply to buildings

sited on the upper half of an isolated hill, ridge or escarpment meeting all of the following conditions:]

The prescriptive provisions of ICC 600, AWC WFCM, or AISI S230 shall not be permitted for either of the following cases:

1. [The hill, ridge or escarpment is 60 feet (18 288 mm) or higher if located in Exposure B or 30 feet (9144 mm) or higher if located in Exposure C.] Structures which are more than three stories above grade plane in height.
2. [The maximum average slope of the hill exceeds 10 percent. The hill, ridge or escarpment is unobstructed upwind by other such topographic features for a distance from the high point of 50 times the height of the hill or 2 miles (3.22 km), whichever is greater.] Structures designed using exception 3 in Section 1609.2 Protection of Openings.

16.26C.1609.2 Subsection 1609.2 amended. Subsection 1609.2 of the International Building Code is amended to read as follows:

1609.2 Protection of openings. In windborne debris regions, glazing in buildings shall be impact resistant or protected with an impact-resistant

covering meeting the requirements of an approved impact-resistant standard or ASTM E1996 and ASTM E1886 referenced herein as follows:

1. Glazed openings located within 30 feet (9144 mm) of grade shall meet the requirements of the large missile test of ASTM E1996.
2. Glazed openings located more than 30 feet (9144 mm) above grade shall meet the provisions of the small missile test of ASTM E1996.
3. Glazing in Risk Category II, III or IV buildings located over 60 feet (18 288 mm) above the ground and over 30 feet (9144 mm) above aggregate surface roofs located within 1,500 feet (458 m) of the building shall be permitted to be unprotected.
4. Glazing in Risk Category IV buildings and structures, and those Risk Category III buildings of the following occupancies shall be provided with windborne debris protection:
 - a. Covered structures whose primary occupancy is public or educational assembly with an occupant load greater than 300.
 - b. Health care facilities with an occupant load of 50 or more resident patients, but not having surgery or emergency treatment facilities.
 - c. Any other public building with an occupant load greater than 5,000.
5. Glazing in Risk Category I, II, and other Risk Category III buildings and structures are subject to the following exceptions:

Exceptions:

1. Wood structural panels with a minimum thickness of 7/16 inch (11.1 mm) and maximum panel span of 8 feet (2438 mm) shall be permitted for opening protection in buildings with a mean roof height of 33 feet (10 058 mm) or less that are classified as a Group R-3 or R-4 occupancy. Panels shall be precut so that they shall be attached to the framing surrounding the opening containing the product with the glazed opening. Panels shall be predrilled as required for the anchor- age method and shall be secured with the attachment hardware provided. Attachments shall be designed to resist the components and cladding loads determined in accordance with the provisions of ASCE 7, with corrosion-resistant attachment hardware provided and anchors permanently installed on the building. Attachment in accordance with Table 1609.2 with corrosion-resistant attachment hardware provided and anchors permanently installed on the building is per- mitted for buildings with a mean roof height of 45 feet (13 716 mm) or less where $[V_{asd}]$ $V_{eff-asd}$ determined in accordance with Section 1609.3.1 does not exceed 140 mph (63 m/s).
2. Glazing in Risk Category I buildings, including greenhouses that are occupied for growing plants on a production or research basis, without public access shall be permitted to be unprotected.

3. [Glazing in] Risk Category II[, III or IV] buildings [located over 60 feet (18 288 mm) above the ground and over 30 feet (9144 mm) above aggregate surface roofs located within 1,500 feet (458 m) of the building] shall be permitted to be designed with unprotected openings subject to the following requirements:.
- a. For each direction of wind, determination of enclosure classification shall be based on the assumption that all unprotected glazing on windward walls are openings while glazing on the remaining walls and roof are intact and are not assumed to be openings.
 - b. Partially enclosed and open occupancy R-3 buildings without wind-borne debris protection shall also include a residential safe room in accordance with Section 425, Hawaii residential safe room, or alternatively provide an equivalently sized room structurally protected by construction complying with Section 429.5.

16.26C.1609.2 Table 1609.2 amended. Subsection 1609.2 of the International Building Code is amended by amending Table 1609.2 to read as follows:

Table 1609.2
Wind-Borne Debris Protection Fastening Schedule For Wood
Structural Panels ^{a,b,c,d}

	Fastener Spacing
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Fastener Type	Panel span ≤ 4 feet	Panel span > 4 feet and ≤ 6 feet	Panel span > 6 feet and ≤ 8 feet
No. 8 Wood screw based anchor with 2 inch embedment length	16"	10"	8"
No. 10 Wood screw based anchor with 2-inch embedment length	16"	12"	9"
¾-inch lag screw based anchor with 2-inch embedment length	16"	16"	16"

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound = [4.448 N] 0.454 kg, 1 mile per hour = [0.447 m/s] 1.609 km/h.

- a. This table is based on a 175 mph ultimate design wind speed and a mean roof height of 45 feet.
- b. Fasteners shall be installed at opposing ends of the wood structural panel. Fasteners shall be located a minimum of 1 inch from the edge of the panel.
- c. Anchors shall penetrate through the exterior wall covering with an embedment length of 2 inches minimum into the building frame. Fasteners shall be located a minimum of 2-1/2 inches from the edge of concrete block or concrete.
- d. Where panels are attached to masonry or masonry/stucco, they shall be attached utilizing vibration-resistant anchors having a minimum withdrawal capacity of 1,500 pounds.

16.26C.1609.3 Subsection 1609.3 amended. Subsection 1609.3 of the

International Building Code is amended to read as follows:

1609.3 Basic design wind speed. The basic design wind speed, V , in mph, for the determination of the wind loads shall be determined by Figures [1609.3(1) through (8)] 26.5-2A through 26.5-2D of ASCE 7. The basic design wind speed, V , for use in the design of Risk Category II buildings and structures shall be obtained from Figures [1609.3(1) and 1609.3(5)] 26.5-2B of ASCE 7. The basic design wind speed, V , for use in the design of Risk Category III buildings and structures shall be obtained from Figures [1609.3(2) and 1609.3(6)] 26.5-2C of ASCE 7. The basic design wind speed, V , for use in the design of Risk Category

IV buildings and structures shall be obtained from Figures [1609.3(3) and 1609.3(7)] 26.5-2D of ASCE 7. The basic design wind speed, V , for use in the design of Risk Category I buildings and structures shall be obtained from Figures [1609.3(4) and 1609.3(8)] 26.5-2A of ASCE 7. The basic design wind speed, V , shown for Hawaii in Figures 26.5-2A through 26.5-2D of ASCE 7 include topographic effects [for the special wind regions indicated] near mountainous terrain and near gorges, and shall be used with topographic factor K_{zt} of 1.0 and directionality factors given in Table 26.6-1[in accordance with local jurisdiction requirements. The basic design wind speeds, V , determined by the local jurisdiction shall be in accordance with Chapter 26] of ASCE 7.

[In nonhurricane-prone regions, when the basic design wind speed, V , is estimated from regional climatic data, the basic design wind speed, V , shall be determined in accordance with Chapter 26 of ASCE 7.]

Alternatively, when determining wind loads using both the explicit topographic factors given in section 1609.3.2 and the explicit directionality factors of section 1609.3.3, the ultimate design wind speed, V_{unt} , in mph, without topographic effects shall be as follows:

Risk Category I buildings and structures: 115 mph

Risk Category II buildings and structures: 130 mph

Risk Category III buildings and structures: 145 mph

Risk Category IV buildings and structures: 153 mph.

16.26C.1609.3.1 Subsection 1609.3.1 amended. Subsection 1609.3.1 of the International Building Code is amended to read as follows:

1609.3.1 Wind speed conversion

Where required, the basic design wind speeds of Figures [1609.2(1)]26.5-2A through [1609.3(8)]26.5-2D of ASCE 7, shall be converted to effective allowable stress design wind speeds, $[V_{asd}]$ $V_{eff-asd}$, using Table 1609.3.1 or Equation 16-33.

$$[V_{asd} = V \sqrt{0.6} \quad (\text{Equation 16-33})$$

where:

V_{asd} = Effective Allowable stress design wind speed applicable to methods specified in Exceptions 4 and 5 of Section 1609.1.1 and for Section 2308.10.1.

V = Basic design wind speeds determined from Figures 1609.3(1) through 1609.3(8).]

$$\underline{V_{eff-asd} = V \sqrt{0.6} \quad (\text{Equation 16-33})}$$

where:

$V_{eff-asd}$ = Effective Allowable stress design wind speed applicable to methods specified in Exceptions 4 and 5 of Section 1609.1.1 and for Section 2308.10.1.

V = Basic design wind speeds determined from Figures 26.5-2A through 26.5-2D of ASCE 7.

16.26C.1609.3 Table 1609.3.1 amended. Subsection 1609.3 of the International Building Code is amended by amending Table 1609.3.1 to read as follows:

TABLE 1609.3.1
WIND SPEED CONVERSIONS a, b, c

V	100	110	120	130	140	150	160	170	180	190	200
---	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

$V_{\text{eff-asd}}$	78	85	93	101	108	116	124	132	139	147	155
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For SI: 1 mile per hour = 0.44 m/s.

- a. Linear interpolation is permitted.
- b. $V_{\text{eff-asd}}$ = Allowable stress design wind speed applicable to methods specified in Exceptions 4 through 5 of Section 1609.1.1. [V_{eff} = Allowable stress design wind speed applicable to methods specified in Exceptions 1 through 5 of Section 1609.1.1.]
- c. V = basic design wind speeds determined from Figures 26.5-2A through 26.5-2D of ASCE 7. [V = basic design wind speeds determined from Figures 1609.3(1) through 1609.3(8).]

16.26C.1609.3 Subsection 1609.3.2 added. Subsection 1609.3 of the International Building Code is amended to add Subsection 1609.3.2 to read as follows:

1609.3.2 Topographic effects. Wind speed-up effects caused by topography shall be included in the calculation of wind loads by using the factor K_{zt} , where K_{zt} is given in Figures 1609.3.2(b) through 1609.3.2(d).

Exception:

Site-specific probabilistic analysis of directional K_{zt} based on wind-tunnel testing of topographic speed-up shall be permitted to be submitted for approval by the building official.

Basic design wind speed, V , is determined per Figures 26.5-2A through 26.5-2D of ASCE 7 that already include topographic effects near mountainous terrain and near gorges, which shall be used with a topographic factor K_{zt} of 1.0 and the directionality factors given in Table

26.6-1 of ASCE 7.

16.26C.1609.3 Figures 1609.3.2(b) through 1609.3.2(d) added.

Subsection 1609.3 of the International Building Code is amended by adding Figures 1609.3.2(b) through 1609.3.2(d) as shown:

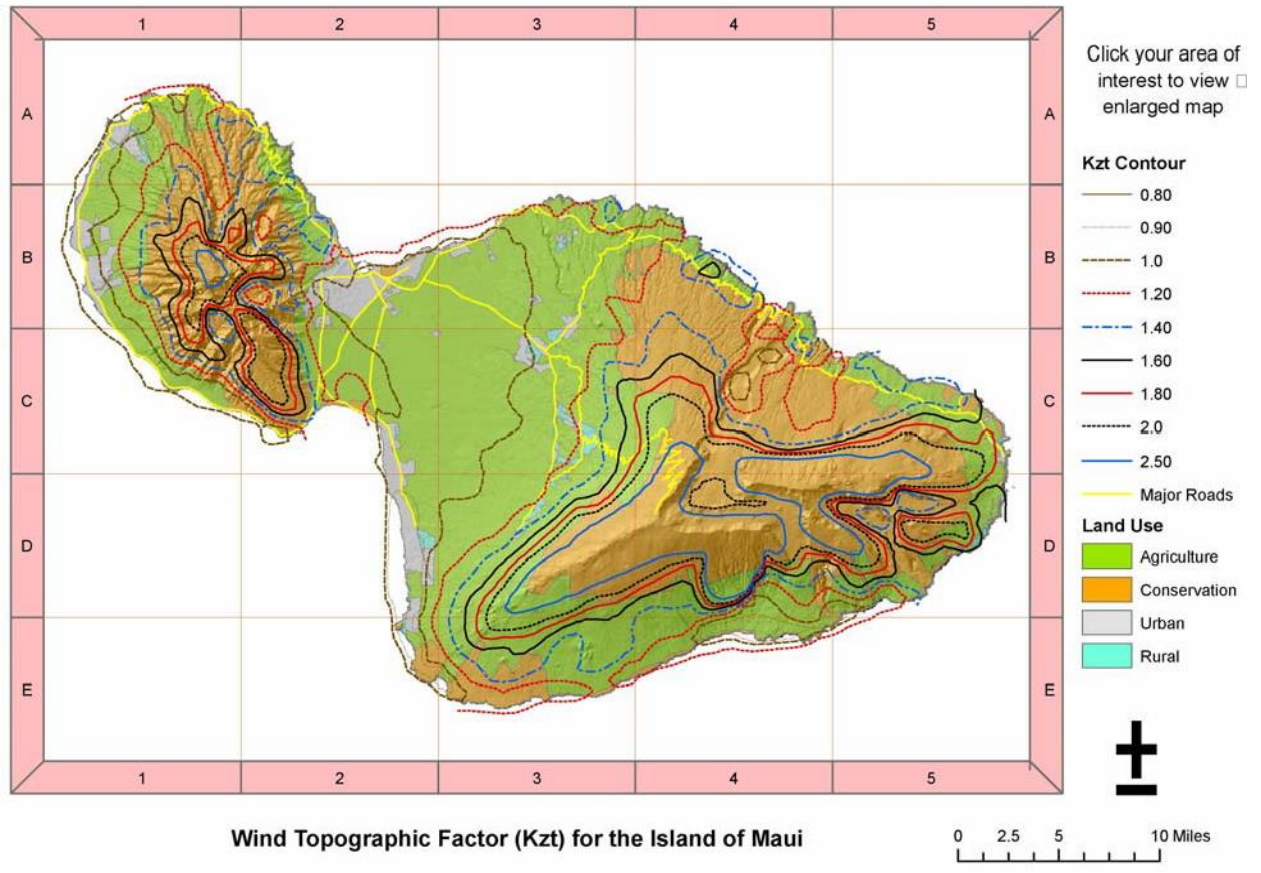


Figure 1609.3.2(b)
County of Maui, Island of Maui Peak Gust Topographic Factor K_{zt}

Wind Topographic Factor (K_{zt}) for the Island of Molokai

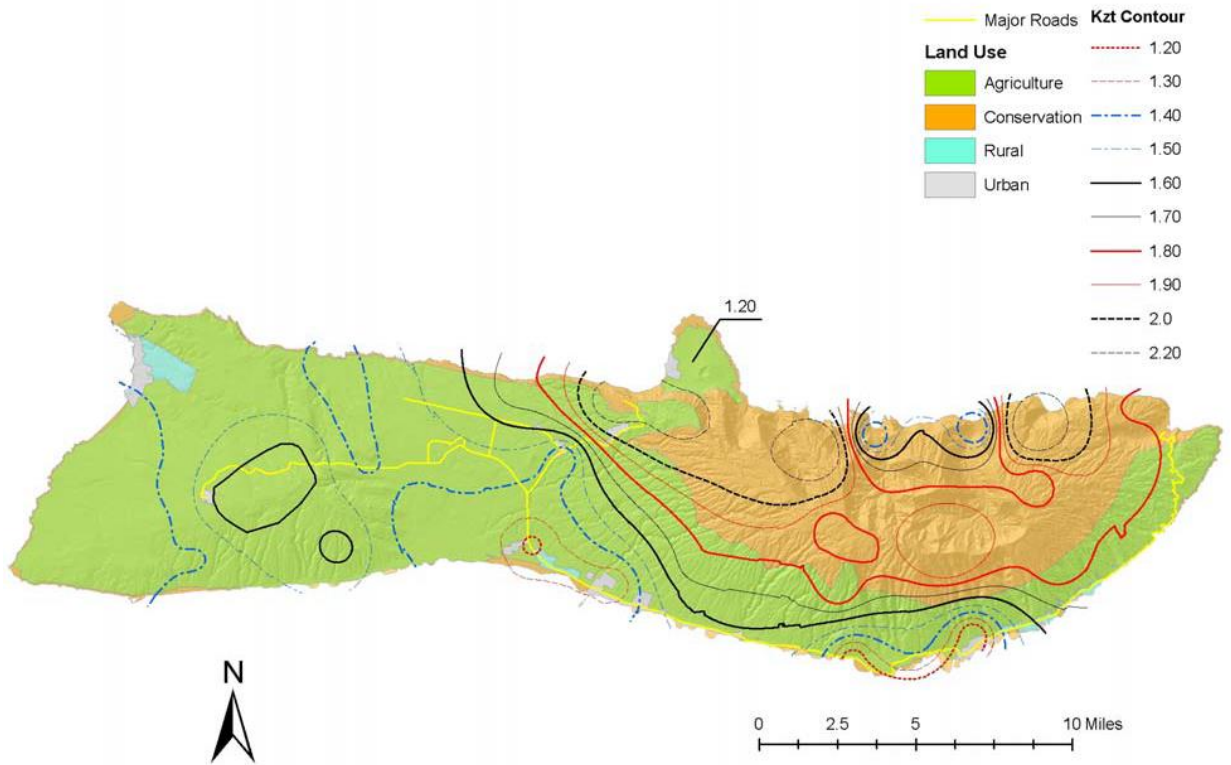


Figure 1609.3.2(c)
County of Maui, Island of Molokai Peak Gust
Topographic Factor K_{zt}

Wind Topographic Factor (K_{zt}) for the Island of Lanai

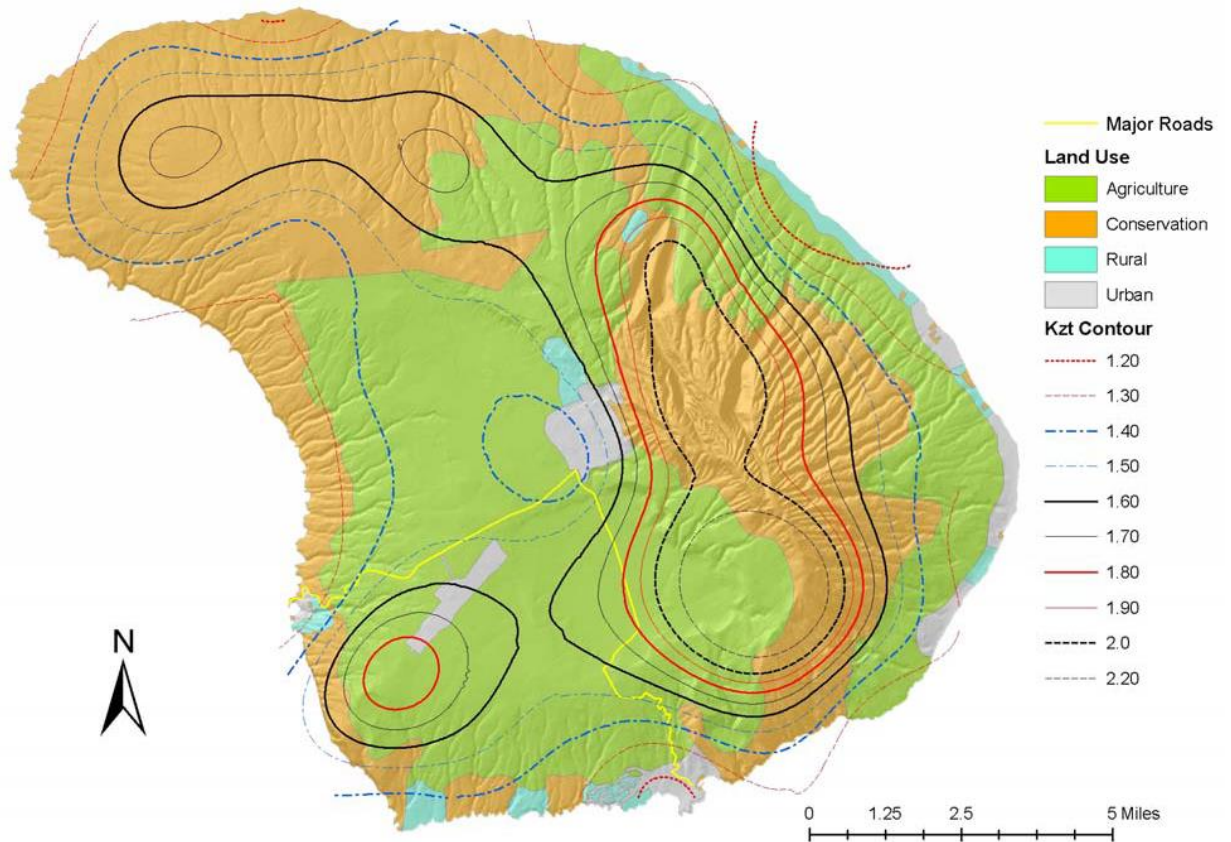


Figure 1609.3.2(d)
County of Maui, Island of Lanai Peak Gust Topographic
Factor K_{zt}

16.26C.1609.3 Table 1609.3.2(e) added. Subsection 1609.3 of the International Building Code is amended by adding Table 1609.3.2(e) as shown:

Table 1609.3.2(e)
Height Adjustment of Mapped K_{zt} Values at Sites with Ground
Elevation Less than 500 feet

Building roof height above ground (ft)	≤100	120	140	160	180	200	220	≥240
Adjustment factor to K_{zt} ≥1.2	100%	98%	96%	94%	92%	90%	92%	94%

16.26C.1609.3 Subsection 1609.3.3 added. Subsection 1609.3 of the International Building Code is amended to add Subsection 1609.3.3 to read as follows:

1609.3.3 Directionality factor. The wind directionality factor, K_d , shall be determined from Table 1609.3.3(a)(2) and 1609.3.3(b)(2).

Exception: Basic design wind speed, V , is determined per Figures 1609.3(5) through 1609.3(8) that already include topographic effects near mountainous terrain and near gorges, which shall be used with a topographic factor K_{zt} of 1.0 and the directionality factors given in Table 26.6-1 of ASCE 7.

16.26C.1609.3 Table 1609.3.3(a)(2) added. Subsection 1609.3 of the International Building Code is amended by adding Table 1609.3.3(a)(2) as shown:

Table 1609.3.3(a)(2)
 K_d Values for Main Wind Force Resisting Systems Sited in Maui County
a,b

Topographic Location in the County of Maui	Main Wind Force Resisting Systems		Main Wind Force Resisting Systems with totally independent systems in each orthogonal direction		Biaxially Symmetric and Axisymmetric Structures of any Height and Arched Roof Structures
	Mean Roof Height less than or equal to 100 ft.	Mean Roof Height greater than 100 ft.	Mean Roof Height less than or equal to 100 ft.	Mean Roof Height greater than 100 ft.	
Sites on the Island of Maui at an elevation not greater than 1000 ft.	0.60	0.65	0.70	0.75	0.85
Sites on the Island of Maui at an elevation greater than 1000 ft.	0.65	.70	0.75	0.80	0.90
All other sites on the Islands of Molokai and Lanai	0.80	0.85	0.80	0.85	0.95

- a. The values of K_d for other non-building structures indicated in ASCE-7 Table 26.6-1 shall be permitted.
- b. Site-specific probabilistic analysis of K_d based on wind-tunnel testing of topography and peak gust velocity profile shall be permitted to be submitted for approval by the Building Official, but K_d shall have a value not less than 0.60.

16.26C.1609.3 Table 1609.3.3(b)(2) added. Subsection 1609.3 of the International Building Code is amended by adding Table 1609.3.3(a)(2) as shown:

Table 1609.3.3(b)(2)
 K_d Values for Components and Cladding of Buildings Sited in Maui
County^{a,b}

Topographic Location on the County of Maui	Components and Cladding		
	Mean Roof Height less than or equal to 100 ft.	Mean Roof Height greater than 100 ft.	Risk Category IV Buildings and Structures
Sites on the Island of Maui at an elevation not greater than 1000 ft	0.65	0.70	0.75
Sites on the Island of Maui at an elevation greater than 1000 ft.	0.70	0.75	0.85
All other sites on the Islands of Molokai and Lanai	0.80	0.85	0.85

- a. The values of K_d for other non-building structures indicated in ASCE-7 Table 26.6-1 shall be permitted.
- b. Site-specific probabilistic analysis of K_d based on wind-tunnel testing of topography and peak gust velocity profile shall be permitted to be submitted for approval by the Building Official, but in any case, subject to a minimum value of 0.65.

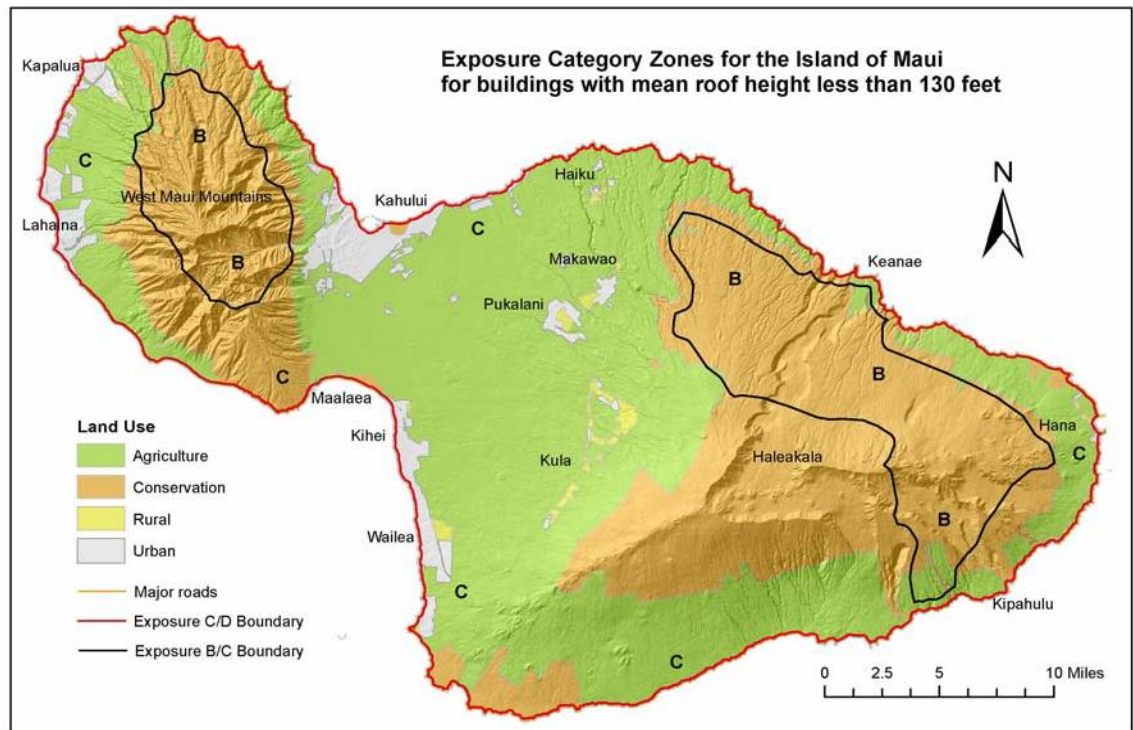
16.26C.1609.4.1 Subsection 1609.4.1 amended. Subsection 1609.4.1 of the International Building Code is amended to read as follows:

1609.4.1 Wind directions and sectors. For each selected wind direction considered, at which the wind loads are to be evaluated, the exposure of the building or structure shall be determined for the two upwind sectors extending 45 degrees (0.79 rad) either side of the selected wind direction. The exposures in these two sectors shall be determined in accordance with Sections 1609.4.2 and

1609.4.3 and the exposure resulting in the highest wind loads shall be used to represent winds from that direction.

Exception: Exposure categories shall be permitted to be determined using Figures 1609.4(b) and 1609.4(c).

16.26C.1609.4 Figures 1609.4(b) and 1609.4(c) added. Subsection 1609.4 of the International Building Code is amended by adding Figures 1609.4(b) through 1609.4(c) as shown:



Notes:

1. Intermediate exposures, between categories B and C and between C and D, are permitted when substantiated per ASCE 7 recognized methodology.
2. Sites located within the C (coastal) zone shall be permitted to be evaluated for exposure category B for the wind directions where an adjacent B zone exists in the applicable upwind sector.
3. Sites located within 600 feet from the coastline shall be exposure category D for onshore wind directions.
4. For buildings whose height is equal to or greater than 130 ft, exposure category shall be determined per Section 1609.4.
5. For buildings whose mean roof height is less than or equal to 30 ft, exposure category shall be permitted to be evaluated per Section 1609.4.

Figure 1609.4 (b)
Exposure Category Zones for Island of Maui, Maui
County

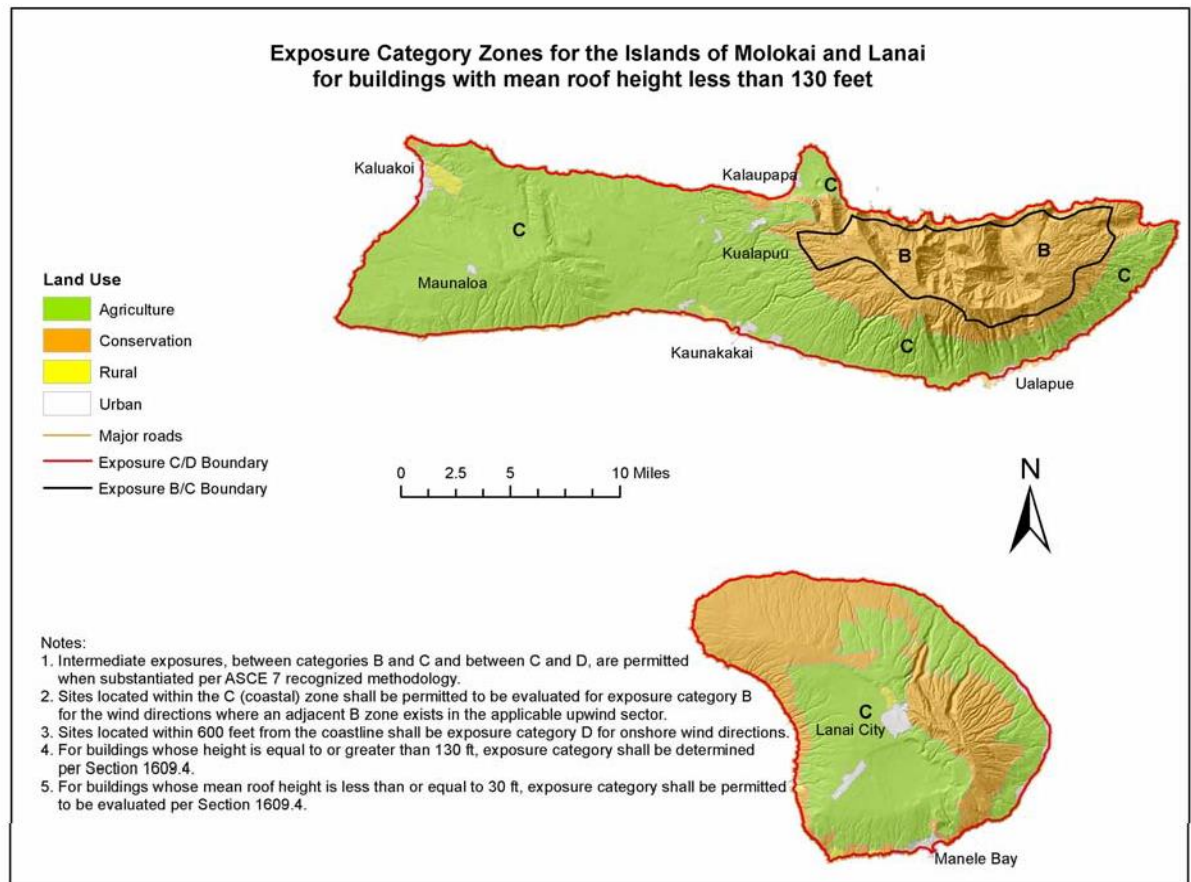


Figure 1609.4 (c)
Exposure Category Zones for Islands of Molokai and
Lanai, Maui County

16.26C.1609.5 Subsection 1609.5.4 added. Subsection 1609.5 of the International Building Code is amended to add Subsection 1609.5.4 to read as follows:

1609.5.4 Roof-top solar panels for conditions not included in ASCE 7
Chapter 29. The normal force on other configurations of roof-top panels not

regulated by ASCE 7 Chapter 29 shall be not less than that determined by Equation 1609-5:

$$F = q_h(GC_p)C_N A \quad (\text{lb}) \quad (\text{N}) \quad \text{(Equation 1609-5)}$$

Where:

C_N = pressure coefficients for monoslope free roofs from ASCE 7-16 Table 30.8-1 considering each elevated panel as a free roof surface in clear wind flow. The angle θ used for the determination of C_N shall be measured as the angle of the panel with respect to the plane of the roof (ω in Figure 29.4-7 of ASCE 7). Values of C_N for forces on the panel may be taken as the Zone 1 coefficients.

Exception: Zone 2 coefficients for C_N shall be used where the panel angle, ω , is greater than 7.5 degrees; panels are located a distance less than or equal to twice the roof height measured from a roof corner; and the parapet is greater than 24 inches (610 mm) in height above the roof.

GC_p = the component and cladding external pressure coefficient for roofs for the roof zone corresponding to the location of the solar panel, and the effective wind

area shall be that of the solar panel. The minimum magnitude of negative pressure values of GC_p in Zone 1 shall be taken as -1.0.

A = the total area of the solar panel element.

When located in roof zone 2 or 3 as defined in ASCE 7, the force F shall be applied with an eccentricity equal to a third of the solar panel width.

1609.5.4.1 Additive panel wind loads. The load on the panel shall be applied as point load anchorage reactions additive to the resultant of the pressure determined acting on the portion of the roof underlying the panel.

1609.5.4.2 Ballasted panels. Panels that are ballasted for uplift resistance and tilted at an angle α of 10 degrees or more from a horizontal plane shall be designed to resist the force determined by Equation 1609-7:

$$F_{ballast} \geq F \left(\frac{\mu \cos \beta + \sin \beta}{\mu \cos \alpha - \sin \alpha} \right) \quad (1b) \quad (N) \quad (\text{Equation 1609-7})$$

Where:

F = the normal force on each panel determined in accordance with Section 1609.5.4

α = the angle of the roof plane with respect to horizontal.

β = the angle of tilt of the panel with respect to the roof plane.

μ = the static friction coefficient between the panel base and its bearing surface.

Alternatively, to resist uplift and sliding, ballasted panels that are tilted at an angle of less than 10 degrees from a horizontal plane shall each be ballasted to resist a force equal to 2 times the normal force on each panel. Ballasted panels that are tilted at an angle between 10 degrees to 25 degrees from a horizontal plane shall each be ballasted to resist a force equal to 8 times the normal force on each panel.

1609.5.4.3 Permeability. A reduction of load on the panels for permeability of the panel system shall not be permitted unless demonstrated by approved wind-tunnel testing or recognized documentation for the type of panel system being considered. Testing or documentation shall replicate the panel separation spacing and height above the roof.

1609.5.4.4 Shielding. A reduction of load on the panels for shielding provided by the roof or other obstruction shall not be permitted unless demonstrated by approved wind-tunnel testing or recognized documentation for the type of panel system being considered. Testing or documentation shall replicate the panel separation spacing and height above the roof.

16.26C.1613 Table 1613.2.5(1) amended. Section 1613 of the International Building Code is amended by amending Table 1613.2.5(1) to read as follows:

TABLE 1613.2.5(1)
SEISMIC DESIGN CATEGORY BASED ON SHORT-PERIOD (0.2 second) RESPONSE ACCELERATION

VALUE OF S_{DS}	RISK CATEGORY		
	I or II	III	IV
$S_{DS} < 0.167g$	A	A	A
$0.167g \leq S_{DS} < 0.33g$	B	B	C
$0.33g \leq S_{DS} < 0.50g$	C	C	D
$0.50g \leq S_{DS} \leq 0.60g$	[D] <u>C</u>	D	D
$0.60g \leq S_{DS}$	<u>D</u>	<u>D</u>	<u>D</u>

16.26C.1613 Table 1613.2.5(2) amended. Section 1613 of the International Building Code is amended by amending Table 1613.2.5(2) to read as follows:

TABLE 1613.2.5(2)
SEISMIC DESIGN CATEGORY BASED ON 1-SECOND PERIOD RESPONSE ACCELERATION

VALUE OF S_{DI}	RISK CATEGORY		
	I or II	III	IV
$S_{DI} < 0.067g$	A	A	A
$0.067g \leq S_{DI} < 0.133g$	B	B	C
$0.133g \leq S_{DI} < 0.20g$	C	C	D
$0.20g \leq S_{DI} \leq 0.27g$	[D] <u>C</u>	D	D
$0.27g \leq S_{DI}$	<u>D</u>	<u>D</u>	<u>D</u>

16.26C.1704.2 Subsection 1704.2 amended. Subsection 1704.2 of the International Building Code is amended to read as follows:

1704.2 Special inspections and tests. Where application is made to the building official for construction [as specified in Section 105, the owner or the owner's authorized agent, other than the contractor, shall employ one or more approved agencies to provide special inspections and tests during construction on the types of work specified in Section 1705 and identify the approved agencies to the building official. These special inspections and tests are in addition to the inspections by the building official that are identified in Section 110.] , the owner or the registered design professional in responsible charge acting as the owner's authorized agent, shall employ one or more special inspectors independent of the contractors performing the work to provide special inspections and tests during construction on the types of work specified in Section 1705 and identify the special inspectors to the building official. These special inspections and tests are in addition to the inspections by the building official.

Exceptions:

1. Special inspections and tests are not required for construction of a minor nature or as warranted by conditions in the jurisdiction as approved by the building official.
2. Unless otherwise required by the building official, special inspections and tests are not required for Group U occupancies that

are accessory to a residential occupancy including, but not limited to, those listed in Section 312.1.

3. Special inspections and tests are not required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of Section 2211.1.2 or the conventional light-frame construction provisions of Section 2308. For these structures, Section 1705.11 shall nevertheless apply.
4. The contractor is permitted to employ the [approved agencies where the contractor is also the owner.] special inspectors where the contractor is also the owner.
5. The employment of a special inspector shall not be required for construction work for any government agency that provides for its own special inspections and tests.

Special inspections and tests are not required for building components unless the design involves the practice of professional engineering or architecture.

16.26C.1704.2.1 Subsection 1704.2.1 amended. Section 1704.2.1 of the International Building Code is amended to read as follows:

1704.2.1 Special inspector qualifications. Prior to the start of the construction, [the approved agencies] each special inspector shall provide written documentation to the building official demonstrating the competence and relevant experience or training of the special inspectors who will perform the special inspections and tests during construction. Experience or training shall be considered to be relevant where the documented experience or training is related in complexity to the same type of special inspection or testing activities for projects of similar complexity and material qualities. These qualifications are in addition to qualifications specified in other sections of this code.

The registered design professional in responsible charge and engineers of record involved in the design of the project are permitted to act as the [approved agency and their personnel are permitted to act as] special inspector and their personnel are permitted to act as special inspectors for the work designed by them, provided they qualify as special inspectors.

16.26C.1704.2.3 Subsection 1704.2.3 amended. Subsection 1704.2.3 of the International Building Code is amended to read as follows:

1704.2.3 Statement of special inspections. [The applicant shall submit a statement of special inspections in accordance with Section 107.1 as a condition for permit issuance. This statement shall be in accordance with Section 1704.3.

Exception: A statement of special inspections is not required for portions of structures designed and constructed in accordance with the cold-formed steel light-frame construction provisions of Section 2211.1.2 or the conventional light-frame construction provisions of Section 2308.]

The construction drawings or building permit documentation shall include a complete list of special inspections required by this section and completed by the registered design professional.

16.26C.1704.2.4 Subsection 1704.2.4 amended. Subsection 1704.2.4 of the International Building Code is amended to read as follows:

1704.2.4 Report requirement. [Approved agencies] Special inspectors shall keep records of special inspections and tests. The [approved agency] special inspector shall submit reports of special inspections and tests to the [building official and to the registered design professional in responsible charge] owner and licensed engineer or architect of record. Reports shall indicate that work inspected or tested was or was not completed in conformance to approved construction documents. Discrepancies shall be brought to the immediate attention of the contractor for correction[.], then if uncorrected, to the licensed engineer or architect of record and to the building official. [If they are not corrected, the discrepancies shall be brought to the attention of the building

official and to the registered design professional in responsible charge prior to the completion of that phase of the work. A final report documenting required special inspections and tests, and correction of any discrepancies noted in the inspections or tests, shall be submitted at a point in time agreed upon prior to the start of work by the owner or the owner's authorized agent to the building official.] The special inspector shall submit a final signed report to the owner and licensed engineer or architect of record, stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance to the approved plans and specifications and the applicable workmanship provisions of this code. Prior to the final inspection required under in this code, the licensed engineer or architect of record shall submit a written statement verifying receipt of the final special inspection reports and documenting that there are no known unresolved code requirements that create significant public safety deficiencies.

16.26C.1704.3 Subsection 1704.3 deleted. Subsection 1704.3 of the International Building Code is deleted in its entirety:

16.26C.1704.5 Subsection 1704.5 deleted. Subsection 1704.5 of the International Building Code is deleted in its entirety.

16.26C.1704.6 Subsection 1704.6 amended. Subsection 1704.6 of the International Building Code is amended to read as follows:

1704.6 Structural observations. Structural observations shall be performed in accordance with Hawaii Revised Statutes, chapter 464, section 5, administered and enforced by the Department of Commerce and Consumer Affairs.[Where required by the provisions of Section 1704.6.1, 1704.6.2 or 1704.6.3, the owner or the owner's authorized agent shall employ a registered design professional to perform structural observations. Structural observation does not include or waive the responsibility for the inspections in Section 110 or the special inspections in Section 1705 or other sections of this code.

Prior to the commencement of observations, the structural observer shall submit to the building official a written statement identifying the frequency and extent of structural observations.

At the conclusion of the work included in the permit, the structural observer shall submit to the building official a written statement that the site visits have been made and identify any reported deficiencies that, to the best of the structural observer's knowledge, have not been resolved.

1704.6.1 Structural observations for structures. Structural observations shall be provided for those structures where one or more of the following conditions exist:

1. The structure is classified as Risk Category IV.
2. The structure is a high-rise building.
3. Such observation is required by the registered design professional responsible for the structural design.
4. Such observation is specifically required by the building official.

1704.6.2 Structural observations for seismic resistance. Structural observations shall be provided for those structures assigned to Seismic Design Category D, E or F where one or more of the following conditions exist:

1. The structure is classified as Risk Category III or IV.
2. The structure is assigned to Seismic Design Category E, is classified as Risk Category I or II, and is greater than two stories above the grade plane.

1704.6.3 Structural observations for wind resistance. Structural observations shall be provided for those structures sited where V is 130 mph (58 m/sec) or greater and the structure is classified as Risk Category III or IV.]

16.26C.1705.3 Subsection 1705.3 amended. Subsection 1705.3 of the International Building Code is amended to read as follows:

1705.3 Concrete construction. Special inspections and tests of concrete construction shall be performed in accordance with this section and Table 1705.3.

Exception: Unless required by section 1705.11 Special inspections for wind resistance or section 1705.12 Special inspections for seismic resistance special inspections and tests shall not be required for concrete used in:

1. Isolated spread concrete footings of buildings three stories or less above grade plane that are fully supported on earth or rock where:
 - 1.1. The footings support walls of light-frame construction.
 - 1.2. The structural design of the footing is based on a specified compressive strength, f_c , not more than 2,500 pounds per square inch (psi) (17.2 MPa), regardless of the compressive strength specified in the approved construction documents or used in the footing construction.
2. Continuous concrete footings supporting walls of buildings three stories or less above grade plane that are fully supported on earth or rock where:
 - 2.1. The footings support walls of light-frame construction.
 - 2.2. Concrete foundation walls constructed in accordance with Table 1807.1.6.2.
3. The structural design of the footing is based on a specified compressive strength, f_c , not more than 2,500 pounds per square inch (psi) (17.2 MPa), regardless of the compressive strength specified in the approved construction documents or used in the footing construction.

4. Nonstructural concrete slabs supported directly on the ground, including prestressed slabs on grade, where the effective prestress in the concrete is less than 150 psi (1.03 MPa).
5. Concrete patios, driveways and sidewalks, on grade.

16 .26C.1705.11 Subsection 1705.11 replaced. Subsection 1705.11 of the International Building Code is hereby deleted in its entirety and adding new Subsection 1705.11 to read as follows:

1705.11 Special inspections for wind resistance. Special inspections for wind resistance specified in Section 1705.11.1, unless exempted by the exceptions to Section 1704.2, are required for buildings and structures constructed where the basic design wind speed, V, is 120 mph (53 m/sec) or greater.

1705.11.1 Complete load path and uplift ties. Complete Load Path and Uplift Ties. Special inspection is required for metal Complete Load Path and Uplift Ties. Special inspection is required for metal connectors, anchors, or fasteners for wood and cold-formed steel construction at the following locations: roof ridges, roof rafters to beam or wall supports, beams to posts, posts or walls to floor framing or foundation below, ground anchors, and all other connections that are part of the load path to resist uplift forces.

Continuous special inspection is required during field gluing operations of elements of the main wind-force-resisting system.

The special inspector need not be present during the installation of all of the connectors, provided that the special inspector verifies that all of the connectors are installed in conformance with the requirements of this code.

16.26C.1804.1 Subsection 1804.1 amended. Subsection 1804.1 of the International Building Code is amended to read as follows:

1804.1 Excavation near foundations. Excavation for any purpose shall not reduce vertical or lateral support for any foundation or adjacent foundation without first underpinning or protecting the foundation against detrimental lateral or vertical movement, or both.

Requirements governing excavation, grading and earth work construction including fills and embankments shall also comply with chapter 20.08, Maui County Code.

16.26C.1810.3.6 Subsection 1810.3.6 amended. Subsection 1810.3.6 of the International Building Code is amended to read as follows:

1810.3.6 Splices. Splices shall be constructed so as to provide and maintain true alignment and position of the component parts of the deep foundation element during installation and subsequent thereto and shall be designed to resist the axial and shear forces and moments occurring at the location of the splice during driving and under service loading [for design load combinations. Where deep foundation elements of the same type are being spliced, splices shall develop not less than 50 percent of the bending strength of the weaker section. Where deep foundation elements of different materials or different types are being spliced, splices shall develop the full compressive strength and not less than 50 percent of the tension and bending strength of the weaker section. Where structural steel cores are to be spliced, the ends shall be milled or ground to provide full contact and shall be full-depth welded.]

Splices occurring in the upper 10 feet (3048 mm) of the embedded portion of an element shall be designed to resist at allowable stresses the moment and shear that would result from an assumed eccentricity of the axial load of 3 inches (76 mm), or the element shall be braced in accordance with Section 1810.2.2 to other deep foundation elements that do not have splices in the upper 10 feet (3048 mm) of embedment.

16.26C.1904 Subsection 1904.3 added. Section 1904 of the International Building Code is amended adding subsection 1904.3 to read as follows:

1904.3 Concrete Strap Type Anchors. Concrete strap-type anchors made out of cold-formed steel shall not be used along the perimeter edges of a slab on grade where the steel does not have at least 1-1/2 inches side cover or other adequate protection.

16.26C.1905 Subsection 1905.1.9 added. Section 1905 of the International Building Code is amended adding subsection 1905.1.9 to read as follows:

1905.1.9 ACI 318, Section 19.3.2.1. Modify ACI 318 Table 19.3.2.1 as follows: Change the Maximum w/cm ratio for Exposure Class Cl to 0.50.

16.26C.1905 Subsection 1905.1.10 added. Section 1905 of the International Building Code is amended adding subsection 1905.1.10 to read as follows:

1905.1.10 ACI 318, Section 20.7 Embedments. Add ACI 318, Section 20.7.6 Anchor Bolts at the Perimeter Edge of a Slab on Grade. Anchor bolts shall be hot dipped galvanized in accordance with ASTM F2329 and have a minimum concrete side cover of 1-1/2 inches unless provisions have been made to protect the anchor bolts from corrosion.

16.26C.1905 Subsection 1905.2 added. Section 1905 of the International Building Code is amended adding subsection 1905.2 to read as follows:

1905.2 ACI 318, Section 1.4.2, Revised ACI 318, Section 1.4.2 to read as follows: 1.4.2 Applicable provisions of ACI 318 shall be permitted to be used for structures not governed by the general building code. Where repairs and rehabilitation are not required to satisfy the provisions of ACI 318, the provisions of ACI 562-16 shall be permitted to be used for the assessment, repair, and rehabilitation of existing structures.

16.26C.2104.1 Subsection 2104.1.3 added. Subsection 2104.1 of the International Building Code is amended adding subsection 2104.1.3 to read as follows:

2104.1.3 Cleanouts. Cleanouts shall be provided for all grout pours over 5 feet 4 inches in height. Special provisions shall be made to keep the bottom and sides of the grout spaces, as well as the minimum total clear area required by ACI 530.1- 05/ASCE 6-05/TMS 602-05 clean and clear prior to grouting.

Exception: Cleanouts are not required for grout pours 8 feet or less in height providing all of the following conditions are met:

1. The hollow masonry unit is 8-inch nominal width or greater with specified compressive strength f_m less than or equal to 1,500 psi;
2. The specified compressive strength of masonry, f'_m , is less than or equal to 2,000 psi as determined per TMS 602 Table 2;
3. Fine grout is used complying with ASTM C-476 minimum compressive strength of 3,000 psi;
4. Special Inspection is provided.

16.26C.2203 Subsection 2203.2 added. Section 2203 of the International Building Code is amended to add subsection 2203.2 to read as follows:

2203.2 Protection of Sill Track. Cold formed steel framing sills that directly bear on concrete or masonry that is in direct contact with earth shall be shielded along the exterior flange and bottom of the sill track with a self-adhered rubberized asphalt flashing material with a minimum thickness of 25 mil (0.64 mm) or other moisture barrier conforming to ASTM D412, D570, and E96/E96M.

16.26C.2211.1.2 Subsection 2211.1.2 amended. Subsection 2211.1.2 of the International Building Code is amended to read as follows:

2211.1.2 Prescriptive framing. Detached one- and two- family dwellings and townhouses, less than or equal to three stories above grade plane, shall be

permitted to be constructed in accordance with AISI S230 subject to the limitations therein. Prescriptive framing shall not be applicable for structures designed using exception 3 in Section 1609.2 Protection of Openings of this code.

16.26C.2302.1. Subsection 2302.1 amended. Section 2302.1 of the International Building Code is amended to read as follows:

2302.1 General. The design of structural elements or systems, constructed partially or wholly of wood or wood-based products, shall be in accordance with one of the following methods:

1. Allowable stress design in accordance with Sections 2304, 2305 and 2306.
2. Load and resistance factor design in accordance with Sections 2304, 2305 and 2307
3. Conventional light-frame construction in accordance with Section 2304 and 2308.
4. AWC WFCM in accordance with Section 2309.
5. The design and construction of log structures in accordance with the provisions of ICC 400.

Exception:

Prescriptive requirements in applicable to the exterior roof and wall enclosure in 2304, 2308 and 2309 shall not be applicable for structures designed using exception 3 in Section 1609.2 Protection of Openings.

Method 3 and method 4 shall not be applicable for structures designed using exception 3 in Section 1609.2 Protection of Openings.

16.26C.2303.1.9 Subsection 2303.1.9 replaced. Section 2303.1.9 of the International Building Code is deleted in its entirety and adding new Subsection 2303.1.9 to read as follows:

2303.1.9 Preservative-treated Wood. Structural lumber, including plywood, posts, beams, rafters, joists, trusses, studs, plates, sills, sleepers, roof and floor sheathing, flooring and headers of new wood-frame buildings and additions shall be:

1. Treated in accordance with AWWA Standard U1 (UC1 thru UC4B) for AWWA Standardized Preservatives, all marked or branded and monitored by an approving agency. Incising is not required, providing that the retention and penetration requirements of these standards are met.
2. For SBX disodium octaborate tetrahydrate (DOT), retention shall be not less than 0.28 pcf B₂O₃ (0.42 pcf DOT) for exposure to Formosan

termites All such lumber shall be protected from direct weather exposure as directed in AWPAC1 and C2.

3. For structural glued-laminated members made up of dimensional lumber, engineered wood products, or structural composite lumber, pressure treated in accordance with AWPAC1 (C1 thru C4B) or by Light Oil Solvent Preservative (LOSP) treatment standard as approved by the building official. Water based treatment processes as listed in paragraphs 1 and 2 are not allowed to be used on these products unless specified by a structural engineer for use with reduced load values and permitted by the product manufacturer.
4. For structural composite wood products, treated by non-pressure processes in accordance with AWPAC Standard C1 (C1, C2 and C3A) or approved by the building official.

2303.1.9.1 Treatment. Wood treatment shall include the following:

1. A quality control and inspection program which meets or exceeds the current requirements of AWPAC Standards M2-01 and M3-03;
2. Inspection and testing for the treatment standards as adopted by this code shall be by an independent agency approved by the building official, accredited by the American Lumber Standards Committee (ALSC) and contracted by the treating company;

3. Field protection of all cut surfaces with a preservative, which shall be applied in accordance with AWPAs Standard M-4-02 or in accordance with the approved preservative manufacturer's ICC-Evaluation Services report requirements.

2303.1.9.2 Labeling. Labeling shall be applied to all structural lumber 2 inches or greater nominal thickness, with the following information provided on each piece as a permanent ink stamp on one face or on a durable tag permanently fastened to ends with the following information:

1. Name of treating facility;
2. Type of preservative;
3. AWPA use category;
4. Quality mark of third party inspection agency;
5. Retention minimum requirements; and
6. Year of treatment.

All lumber less than 2 inches in nominal thickness, shall be identified per bundle by means of a label consisting of the above requirements. Labels measuring no less than 6 inches by 8 inches shall be placed on the lower left corner of the strapped bundle.

2303.1.9.3 Moisture Content of Treated Wood. When wood pressure treated with a water-borne preservative is used in enclosed locations where drying in service cannot readily occur, such wood shall be at a moisture content of 19 percent or less before being covered with insulation, interior wall finish, floor covering or other material.

16.26C.2304.6.1 Subsection 2304.6.1 amended. Section 2304.6.1 of the International Building Code is amended to read as follows:

2304.6.1 Wood structural panel sheathing. Where wood structural panel sheathing is used as the exposed finish on the outside of exterior walls, it shall have an exterior exposure durability classification. Where wood structural panel sheathing is used elsewhere, but not as the exposed finish, it shall be of a type manufactured with exterior glue (Exposure 1 or Exterior). Wood structural panel wall sheathing or siding used as structural sheathing shall be capable of resisting wind pressures in accordance with Section 1609. Maximum effective wind speeds for wood structural panel sheathing used to resist wind pressures [, connections and framing spacing] shall be in accordance with Table 2304.6.1 for [the applicable wind speed and exposure category where used in] enclosed buildings with a mean roof height not greater than 30 feet (9144 mm) [and a topographic factor (K_{zt}) of 1.0].

16.26C.2304.6 Table 2304.6.1 amended.

Section 2304 of the International Building Code is amended to amend Table 2304.6.1 to read as follows:

**TABLE 2304.6.1
MAXIMUM EFFECTIVE ALLOWABLE STRESS DESIGN WIND SPEED, [$V_{eff-
asd}$] $V_{eff-asd}$ PERMITTED FOR WOOD STRUCTURAL PANEL WALL
SHEATHING USED TO RESIST WIND PRESSURES^{a,b,c}**

MINIMUM NAIL		MINIMUM WOOD STRUCTURAL PANEL SPAN RATING	MINIMUM NOMINAL PANEL THICKNESS (inches)	MAXIMUM WALL STUD SPACING (inches)	PANEL NAIL SPACING		MAXIMUM EFFECTIVE ALLOWABLE STRESS DESIGN WIND SPEED, $V_{eff-asd}^d$ (MPH)		
Size	Penetration (inches)				Edges (inches o.c.)	Field (inches o.c.)	Wind exposure category		
							B	C	D
6d common (2.0" x 0.113")	1.5	24/0	3/8	16	6	12	110	90	85
		24/16	7/16	16	6	12	110	100	90
						6	150	125	110
8d common (2.5" x 0.131")	1.75	24/16	7/16	16	6	12	130	110	105
						6	150	125	110
				24	6	12	110	90	85
						6	110	90	85

For SI: 1 inch = 25.4 mm, 1 mile per hour = 0.447 m/s.

- Panel strength axis shall be parallel or perpendicular to supports. Three-ply plywood sheathing with studs spaced more than 16 inches on center shall be applied with panel strength axis perpendicular to supports.
- The table is based on wind pressures acting toward and away from building surfaces in accordance with Chapter 27 of ASCE 7. Lateral requirements shall be in accordance with Section 2305 or 2308.
- Wood structural panels with span ratings of wall-16 or wall-24 shall be permitted as an alternative to panels with a 24/0 span rating. Plywood siding rated 16 o.c. or 24 o.c. shall be permitted as an alternative to panels with a 24/16 span rating. Wall-16 and plywood siding 16 o.c. shall be used with studs spaced a maximum of 16 inches o.c.
- $V_{eff-asd}$ [V_{asd}] shall be determined in accordance with Section 1609.3.1.

16.26C.2304.12 Subsection 2304.12 replaced.

Subsection 2304.12 of the International Building Code is deleted in its entirety and replaced with Subsection 2304.12 to read as follows:

2304.12 Protection against decay and termites.

2304.12.1 General. Where required by this section, protection from decay and termites shall be provided by the use of naturally durable or preservative-treated wood.

2304.12.2 Wood used above ground. Structural lumber installed above ground shall be preservative-treated wood in accordance with Section 2303.1.8.

2304.12.2.1 Soil treatment and termite barriers. Where structural lumber of wood frame buildings or structures are supported directly on the ground by a concrete slab, or concrete and/or masonry foundation, Formosan subterranean termite protection shall be provided by either chemically treating the soil beneath and adjacent to the building or structure by a Hawaii licensed pest control operator, or stainless steel termite barrier, or other termite protection measures approved by the building official.

All soil treatment, stainless steel termite barrier, and termite protection measures shall be installed according to manufacturer's recommendations for control of Formosan subterranean termites, with chemical barriers applied at the maximum label rates.

2304.12.3 Wood in ground contact. Wood supporting permanent buildings and structures, which is in direct soil contact or is embedded in

concrete or masonry in direct contact with earth shall be treated to the appropriate commodity specification of AWP Standard U1.

Wood in direct soil contact but not supporting any permanent buildings or structures shall be treated to the appropriate commodity specification of AWP Standard U1 for ground contact.

2304.12.4 Retaining walls. Wood in retaining or crib wall shall be treated to AWP Standard U1.

2304.12.5 Wood and earth separation. Where wood is used with less than 6-inch vertical separation from earth (finish grade), the wood shall be treated for ground-contact use.

Where planter boxes are installed adjacent to wood frame walls, a 2- inch-wide (51 mm) air space shall be provided between the planter and the wall. Flashings shall be installed when the air space is less than 6 inches (152 mm) in width. Where flashing is used, provisions shall be made to permit circulation of air in the air space. The wood-frame wall shall be provided with an exterior wall covering conforming to the provisions of section 2304.6.

2304.12.6 Under-floor clearance for access and inspection. Minimum clearance between the bottom of floor joists or bottom of floors without joists and

the ground beneath shall be 24 inches; the minimum clearance between the bottom of girders and the ground beneath shall be 18 inches.

Exception: Open slat wood decks shall have ground clearance of at least 6 inches for any wood member.

Accessible under-floor areas shall be provided with a minimum 18 inch-by 24 inch access opening, effectively screened or covered. Pipes, ducts and other construction shall not interfere with the accessibility to or within under-floor areas.

2304.12.7 Wood used in retaining walls and cribs. Wood installed in retaining or crib walls shall be preservative treated in accordance with AWP A U1 (Commodity Specifications A or F) for soil and fresh water use.

2304.12.8 Weather exposure. All portions of timbers (over 5-inch nominal width) and glued-laminated timbers that form structural supports of a building or other structure shall be protected by a roof, eave, overhangs, flashings, or similar coverings. All wood or wood composite panels, in weather-exposed applications, shall be of exterior type.

2304.12.9 Water splash. Where wood-frame walls and partitions are covered on the interior with plaster, tile or similar materials and are subject to

water splash, the framing shall be protected with approved waterproof paper conforming to Section 1404.2.

2304.12.10 Pipe and other penetrations. Insulations around plumbing pipes shall not pass through ground floor slabs. Openings around pipes or similar penetrations in a concrete or masonry slab, which is in direct contact with earth, shall be filled with non-shrink grout, BTB, or other approved physical barrier.

16.26C.2308.1.1 Subsection 2308.1.1 replaced. Subsection 2308.1.1 of the International Building Code is deleted and replaced to read as follows:

2308.1.1 General. Portions exceeding limitations of conventional light-frame construction.

Where portions of a building of otherwise conventional light-frame construction exceed the limits of Section 2308.2 and the other provisions of this code, those portions and the supporting load path shall be designed in accordance with accepted engineering practice and the provisions of this code. For the purposes of this section, the term “portions” shall mean parts of buildings containing volume and area such as a room or a series of rooms. The extent of such design need only demonstrate compliance of the nonconventional light-framed elements with other applicable provisions of this code and shall be compatible with the performance of the conventional light-framed system.

16.26C.2308.7 Table 2308.7.5 replaced. Subsection 2308.7 of the International Building Code is amended by deleting Table 2308.7.5 and replacing with Table 2308.7.5 as follows:

Table 2308.7.5
Required Rating of Approved Uplift Connectors (pounds)^{a,b,c,d,e,f,g,h,i}

Effective Allowable Stress Design Wind Speed, $V_{\text{eff-asd}}$, 3-sec gust	Roof Span (feet)							Overhangs (pounds/ft) ^d
	12	20	24	28	32	36	40	
85	-72	-120	-144	-168	-192	-216	-240	-38.55
90	-91	-152	-182	-213	-243	-274	-304	-43.22
100	-131	-218	-262	-305	-349	-392	-436	-53.36
110	-175	-292	-350	-409	-467	-526	-584	-64.56
120	-240	-400	-480	-560	-640	-720	-800	-76.83
130	-304	-506	-607	-708	-810	-911	-1012	-90.17

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 1.61 km/hr, 1 pound = 0.454 Kg, 1 pound/foot = 14.5939 N/m.

- a. The uplift connection requirements are based on a 30-foot mean roof height located in Exposure B. For Exposure C and for other mean roof heights, multiply the above loads by the adjustment coefficients below.

Exposure	Mean Roof Height (feet)									
	15	20	25	30	35	40	45	50	55	60
B	1.00	1.00	1.00	1.00	1.05	1.09	1.12	1.16	1.19	1.22
C	1.21	1.29	1.35	1.40	1.45	1.49	1.53	1.56	1.59	1.62
D	1.47	1.55	1.61	1.66	1.70	1.74	1.78	1.81	1.84	1.87

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 mile per hour = 1.61 km/hr, 1 pound = 0.454 Kg, 1 pound/foot = 14.5939 N/m.

- b. The uplift connection requirements are based on the framing being spaced 24 inches on center. Multiply by 0.67 for framing spaced 16 inches on center and multiply by 0.5 for framing spaced 12 inches on center.
- c. The uplift connection requirements include an allowance for 10 pounds of dead load.
- d. The uplift connection requirements do not account for the effects of overhangs. The magnitude of the above loads shall be increased by adding the overhang loads found in the table. The overhang loads are also based on framing spaced 24 inches on center. The overhang loads given shall be multiplied by the overhang projection and added to the roof uplift value in the table.
- e. The uplift connection requirements are based upon wind loading on end zones as defined in Chapter 30, Figure 30.5-1, of ASCE 7. Connection loads for connections located a distance of 20 percent of the least horizontal dimensions of the building from the corner of the building are permitted to be reduced by multiplying the table connection value by 0.7 and multiplying the overhang load by 0.8.
- f. For wall-to-wall and wall-to-foundation connections, the capacity of the uplift connector is permitted to be reduced by 100 pounds for each full wall above. (For example, if a 500-pound rated connector is used on the roof framing, a 400-pound rated connector is permitted at the next floor level down.)
- g. Interpolation is permitted for intermediate values of basic wind speeds and roof spans.
- h. The rated capacity of approved tie-down devices is permitted to include up to a 60-percent

- i. increase for wind effects where allowed by material specifications.
V_{eff-wd} is determined from Section 1609.3.1

16.26C.2800 Chapter 28 Deleted. Chapter 28 of the International Building Code is deleted in its entirety.

16.26C.2902.1 Subsection 2902.1 amended. Subsection 2902.1 of the International Building Code is amended to read as follows:

2902.1 Minimum number of fixtures. Plumbing fixtures shall be provided for the minimum number shown in Table 2902.1 based on the actual use of the building or space. Uses not shown on Table 2902.1 shall be considered individually by the code official. The number of occupants shall be determined by this code. Additions, alterations, or repairs to existing buildings shall comply with this chapter or the International Existing Building Code as required by the building official. The use of alternative fixture types may also be allowed.

16.26C.2902.2 Subsection 2902.2 amended. Subsection 2902.2 of the International Building Code is amended to read as follows:

2902.2 Separate facilities. Where plumbing fixtures are required, separate facilities shall be provided for each sex.

Exceptions:

1. Separate facilities shall not be required for dwellings units and sleeping units.
2. Separate facilities shall not be required in structures or tenant spaces with a total *occupant load*, including both employees and customers, of 15 or fewer.
3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or fewer.
4. Separate facilities shall not be required in business occupancies in which the maximum occupant load is 25 or fewer.
5. Separate facilities shall not be required to be designated by sex where single-user toilets rooms are provided in accordance with Section 2902.1.2.
6. Separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by both sexes and privacy for water closets are installed in accordance with section 405.3.4 of the international Plumbing Code. Urinals shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.
7. The building official may allow other exceptions with justification.

16.26C.3001.1 Subsection 3001.1 amended. Section 3001.1 of the International Building Code is amended to read as follows:

3001.1 Scope. This chapter shall be a guideline and governs the design, construction, installation, alteration and repair of elevators and conveying systems and their components. If this chapter conflicts with another applicable law of the jurisdiction, then said applicable law shall prevail over this chapter.

16.26C.3102.7 Subsection 3102.7 amended. Subsection 3102.7 of the International Building Code is amended to read as follows:

3102.7 Engineering design. The structure shall be designed and constructed to sustain dead loads; loads due to tension or inflation; live loads including wind, snow or flood and seismic loads and in accordance with Chapter 16 of this code. Plans and specifications shall be stamped by an architect or structural engineer or architect licensed in the State of Hawaii.

16.26C.3102 Subsection 3102.9 added. Section 3102 of the International Building Code is amended by adding Subsection 3102.9 to read as follows:

3102.9 Applicability. The provisions of this section shall not apply to residential group R as provided in section 310 of this code.

16.26C.3103 Section 3103 deleted. Section 3103 of the International Building Code is deleted in its entirety.

SECTION 4. Any building permit application received by the director prior to the effective date of this ordinance or any inspection conducted for a valid building permit that was issued prior to the effective date of this ordinance may be approved if it meets the requirements of either this code or Chapter 16.26B, Maui County Code.

SECTION 5. Material to be repealed is bracketed. New material is underscored. In printing this bill, the County Clerk need not include the brackets, the bracketed material, or the underscoring.

SECTION 6. This ordinance takes effect 60 days after approval.