

**Chapter 14**

**PLUMBING CODE**

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**Article 1. General Provisions**

**Sec. 14-1.1 Title and Purpose.**

- (a) Title. This Chapter shall be known as the “Plumbing Code,” may be cited as such, and will be referred to herein as “this Code.”
- (b) Purpose. The purpose of this Code is to provide for the protection of the public health and safety by establishing minimum regulations for the installation, alteration or repair of plumbing and drainage systems, and the inspection thereof. (Ord. No. 859, November 20, 2007; Ord. No. 951, October 14, 2013)

**Sec. 14-1.2 Scope.**

This Chapter sets forth minimum requirements for the design, installation, alteration, repair, and construction of plumbing and drainage systems, and shall apply to all new construction, relocation, alteration, repair, or reconstruction.

Exception: Plumbing work on building or premises owned by or under the direct control of the United States or the State of Hawai‘i.

Definitions. In this Chapter, unless the context otherwise requires:

“Chapter” means this Chapter.

“IAPMO” means the Uniform Plumbing Code as published by the International Association of Plumbing and Mechanical Officials.

“Section” means a section of a Chapter of the Uniform Plumbing Code.

“UPC” means the Uniform Plumbing Code as published by the International Association of Plumbing and Mechanical Officials. (Ord. No. 859, November 20, 2007; Ord. No. 951, October 14, 2013)

## **Article 2. Adoption of the 2006 Uniform Plumbing Code and Amendments Thereto**

### **Sec. 14-2.1 Adoption of the Uniform Plumbing Code.**

The “Uniform Plumbing Code, 2006 Edition,” including all appendices as copyrighted and published by International Association of Plumbing and Mechanical Officials, 5001 East Philadelphia Street, Ontario, CA 91761-2816, is incorporated by reference and made a part of this Chapter. This incorporation by reference includes all parts of the Uniform Plumbing Code subject to the amendments hereinafter set forth.

The 2006 Uniform Plumbing Code Chapter 1, Administration, shall follow the provisions of Chapter 1 of the International Building Code, as amended, in Chapter 12 of the Kaua‘i County Code 1987, as amended, except for the following Sections:

**Section 105.2.1 Emergency Repairs.** Whenever it is necessary to make emergency repairs after normal working hours, on the weekend, or on holidays, the person doing the work shall apply for the proper permits at the Kaua‘i County Building Division within two business days.

**Section 105.3.1.3 To Whom Plumbing Permits May Be Issued.** A plumbing permit is required to perform work covered by this Code and will be issued only to:

- (1) A Plumbing Contractor holding a valid unexpired license under HRS Chapter 444.
- (2) A firm, partnership, association, or corporation other than a plumbing contractor doing work that includes incidental and supplemental plumbing work as defined by HRS Chapter 444 and who has under its employment a plumber holding a valid unexpired license that complies with the provisions set forth in HRS Chapter 448E.
- (3) A Gas Utility Company for doing gas piping work.
- (4) County, Federal and State governments with agencies having under their employment a licensed plumber complying with the provisions set forth in HRS Chapter 448E.
- (5) An owner who performs plumbing work on his or her own building or structure in compliance with HRS Chapter 444 and provided such homeowner is holding a valid unexpired license under HRS Chapter 448E.
- (6) A person, firm, partnership, association or corporation holding a valid unexpired class “A” general engineering or class “C” specialty contractor license for work authorized by the provisions of HRS Chapter 444.

This does not preclude a homeowner who is licensed under HRS Chapter 448E to do plumbing maintenance work for buildings he or she owns.

Section 105.8 is amended by adding a second paragraph to read:

**Performance.** When required pursuant to HRS Chapter 448E, a licensed plumber holding a valid license in compliance with HRS Chapter 448E shall be at the site at all times during the performance, direction or supervision of any plumbing work that is authorized by a permit. The enforcement for compliance with HRS Chapter 444 and HRS Chapter 448E shall be the responsibility of the State of Hawai‘i.

**Plumbing Permit Fees**

For issuing each permit, an application fee of:	\$15.00
In addition:	
For each plumbing fixture or trap (including drainage and vent piping):	\$7.00
For installation, addition, alteration, demolition, removal and repair of each building sewer or building drainage system, including the first 50 feet of drain and sewer lines:	\$20.00
For each additional foot of drain and sewer lines thereof:	\$1.00
For each industrial waste, grease, sand or dirt interceptors and sewage ejector, including its trap and vent:	\$15.00
For installation, addition, alteration or repair of water piping and/or water treating equipment:	\$7.00
For vacuum breakers or backflow protective devices installed subsequent to the installation of the piping or equipment served:	\$15.00
For each vacuum breakers or backflow protective devices installed to hosebibbs:	\$7.00
For each lawn sprinkler system on any one valve including backflow protection devices therefor:	\$15.00
For each electric, oil, gas or solar water heater and/or vent:	\$7.00
For each new installation, addition, altering or repairing of gas piping system, house piping and/or exterior piping for lamps, luau torches and other misc. equipment:	\$15.00
For each gas appliance:	\$7.00
For medical gas piping first five inlet(s) or outlet(s):	
For a specific gas:	\$15.00
For each additional inlet or outlet:	\$2.00
For each swimming pool with drainage connection:	\$15.00
For any transferability of plumbing permit as herein provided, a transfer fee is required:	\$50.00
Reinspection fees assessed under provisions of Sec. 14-2.9:	\$50.00
For each foundation work only, the first:	
10 plumbing fixtures:	\$15.00
For each additional plumbing fixture:	\$2.00
For each gray water system:	\$15.00

The following paragraphs of Section 203.0 are added after the definition of “Aspirator.”

**“Assistants** - Whenever the term “assistants” is used in this Code it shall be construed to mean the authorized representatives of the Administrative Authority.

**Authorized Representatives** - When the term “Authorized Representatives” is used in this Code it shall be construed to mean all plumbing inspectors and their supervisors designated as subordinate officers to the Administrative Authority in the enforcement of this Code.”

The following paragraph is added before the definition of “Boiler Blowoff.”

**“Board** - The Board of Appeals as specified in Chapter 12, Building Code, Kaua‘i County Code 1987, as amended.”

The definition “Building Drain” is amended by deleting the words “two (2) feet (.6m)” and inserting in lieu thereof the words “five (5) feet (1.5m).”

Section 204.0 is amended to read as follows:

**“Building Drain** - That part of the lowest piping of a drainage system that receives the discharge from soil, waste, and other drainage pipes inside the walls of buildings and conveys it to the building sewer beginning five (5) feet (1,524 mm) outside the building wall.”

Section 205.0 is amended as follows:

**“County** - The County of Kaua‘i.”

Section 206.0 is amended as follows:

The following paragraph is added before the definition “Department Having Jurisdiction.”

**“Department** - The Department of Public Works of the County of Kaua‘i.”

The following paragraph is added following the definition of “Drainage System.”

**“Duly Licensed Plumber** - Any person licensed as a plumber under the provisions of Chapter 448E, Hawai‘i Revised Statutes.”

Section 210.0 is amended as follows:

The following paragraph is added after the definition of “Hangers.”

**“Health Officer** - Health Officer shall mean the Director of Health of the department of health, State of Hawai‘i, or the director’s authorized agent.”

Section 215.0 is amended as follows:

The following paragraph is added before the definition of “May.”

**“Maintenance Work** - The keeping in repair and operation of any plumbing installation, apparatus, fixtures, appliance or equipment.”

Section 218.0 is amended as follows:

The sixth paragraph of Section 218.0 is amended to read:

**“Person** - Any individual, firm, partnership, association, corporation or utility company including each and every owner of any whole or fractional interest in the property concerned, whether in fee, any lesser freehold or tenancy at will.”

The following paragraph is added before the definition of “Plumbing Fixture.”

**“Plumbing Contractor** - Any person that is licensed under the provisions of Chapter 444, Hawai‘i Revised Statutes, and possesses a valid unexpired and unrevoked license qualifying the contractor to perform plumbing work.”

The following paragraph is added after the definition of “Single Family Dwelling.”

**“Single Stack System** - A specially designed plumbing system wherein a common stack serves as a drainage pipe as well as a vent pipe.”

The following paragraph is added after the definition of “Storm Drain.”

“**State** - The State of Hawai‘i.”

Section 301.3 is added to read:

“**301.3 International Plumbing Code.** The latest edition of the International Plumbing Code (IPC) may be used in lieu of the Uniform Plumbing Code when approved by the Administrative Authority. A written request by a Hawai‘i licensed and registered mechanical engineer with the concurrence of the building or project owner must be made to the Administrative Authority. The details of this approval shall be recorded and entered into the files of the Administrative Authority. Plans submitted shall be stamped by the Hawai‘i licensed and registered mechanical engineer. This section shall apply only to a new building or project and shall not be applied in conjunction with an existing building. Provisions of the Uniform Plumbing Code and the International Plumbing Code shall not be combined or interchanged unless approved by the Administrative Authority. Plans submitted shall clearly certify on the plumbing and/or mechanical sheets that the International Plumbing Code was used as the basis of design.”

Section 311.4 is amended by deleting the last sentence: “Also, single stack drainage and venting systems, with unvented branch lines are prohibited.”

Section 311.6 is deleted.

Section 313.2 is amended by changing the second sentence to read:

“No piping shall be directly embedded in concrete or masonry unless provisions are made to protect the piping from damage resulting from expansion, contraction and structural settlement.”

Section 313.4 is amended to read:

“**313.4** No building sewer or other drainage piping or part thereof, constructed of materials other than those approved for use under or within a building, shall be installed under or within five (5) feet (1.5m) of any building or structure, or less than one (1) foot (.3m) below the surface of the ground or as approved by the Administrative Authority.”

Section 314.8 is added to read:

“**314.8 Seismic Supports.** Where earthquake loads are applicable in accordance with the Building Code, plumbing piping supports shall be designed and installed for the seismic forces in accordance with the Building Code.”

Section 412, Plumbing fixtures and fixture fittings, Table 4-1, and Table A are deleted in their entirety, and replaced with Section 412.0 to read as follows:

“**412.0 Minimum Number of Required Fixtures.** Plumbing fixtures shall be provided for the type of building occupancy and in the minimum number required in Chapter 29 of the International Building Code.”

Section 710.1 is amended to read as follows:

“**710.1** Multiple separate structures discharging building sewage into a public or private sewer or septic system which have flood level rims below the elevation of the next connecting structures’ flood rims; the drainage piping shall be protected from backflow by installing an approved backwater valve. Fixtures above such elevation shall not discharge through the backwater valve.”

Section 713.7 is added to read:

“**713.7 Permit Required.**

- (a) It shall be unlawful for any person to connect to or to aid another in connecting to, or to cause a connection to be made to, or to make use of, the public sewer system of the County of Kaua‘i without first having filed an application in writing and having obtained the written approval of the Division of Wastewater Management, Department of Public Works and the Administrative Authority.”
- (b) Sewer Inspection. All installation of public sewer system connections, control devices or assemblies required by the Division of Wastewater Management shall receive all its certifications, tests, inspections and approvals from that division.”

Section 713.8 is added to read:

“**713.8** Building sewer construction shall conform to the requirements for main line sewers as set forth in the Sewer Ordinance, County of Kaua‘i, when either of the following conditions exist:

- (1) Where the Administrative Authority requires such construction because of the character or quantity of the sewage or industrial waste to be discharged.
- (2) Where the sewer construction is designed to be, or it is apparent that it may be dedicated to the County of Kaua‘i at this or any future time.”

Section 713.9 is added to read:

“**713.9** Sewer lateral connections shall be installed according to the Kaua‘i County Code-1987, Chapter 25, Sewers, Article 9, Laterals, Administration, Management and Construction.”

Section 715.1, Sanitary drainage, is amended to read as follows:

“**715.1** The building sewer, beginning five (5) feet (1,524 mm) from any building or structure shall be of such materials as prescribed in this Code.”

Section 911.0, Vents, is added to read as follows:

“**911.0 Single Stack System.** When approved by the administrative authority, a single-stack system based on engineered studies and tests may be used in lieu of other related provisions in this code. Plans and specifications of such systems shall be prepared and stamped by a Hawai‘i licensed mechanical engineer.”

Section 1101.11.1, Storm drainage, is amended to read as follows:

“**1101.11.1 Primary Roof Drainage.** Roof areas of a building shall be drained by roof drains or gutters. The location and sizing of drains and gutters shall be coordinated with the structural design and pitch of the roof. Unless otherwise required by the authority having jurisdiction, roof drains, gutters,

vertical conductors or leaders, and horizontal storm drains for primary drainage shall be sized based on a storm of sixty (60) minutes duration and 100 year return period. Refer to the National Weather Service rainfall map for 100-year, 60-minute storms at various locations.”

Section 1601.0, Gray water systems - general, is amended to read as follows:

Section 1601.0(A) is amended to read as follows:

“**1601.0(A)** The provisions of this chapter shall apply to the construction, alteration, and repair of gray water systems for underground landscape irrigation. Installations shall be allowed only in single-family dwellings or as allowed by the authority having jurisdiction. The system shall have no connection to any potable water system and shall not result in any surfacing of the gray water. Except as otherwise provided for in this chapter, the provisions of this code shall be applicable to gray water installation.”

Section 1601.0(D) is amended to read as follows:

“**1601.0(D)** No permit or approval for any gray water system shall be issued until a plot plan with appropriate data or design plans satisfactory to the authority having jurisdiction has been submitted and approved for use. When there is insufficient lot area or inappropriate soil conditions for adequate absorption of the gray water, as determined by the authority having jurisdiction, no gray water system shall be permitted.”

Section 1601.0(E) is amended to read as follows:

“**1601.0(E)** No permit or approval shall be issued for a gray water system on any property in a geologically sensitive area as determined by the authority having jurisdiction.”

Section 1601.0(G) is added as follows:

“**1601.0(G)** Prior to issuance of the certificate of occupancy, the design professional shall provide a written statement of system completion in accordance with approved plans and requirements of this Chapter 16 as amended.”

Section 1603.0 is amended to read as follows:

“**1603.0 Permit or Approval.** It shall be unlawful for any person to construct, install, or alter, or cause to be constructed, installed, or altered any gray water system in a building or on a premises without first obtaining a permit or approval to do such work from the authority having jurisdiction.”

Section 1604.0 is amended to read as follows:

“**1604.0 Drawings and Specifications.** All drawings and specifications shall be prepared, designed, approved, certified, and stamped by a duly registered licensed professional in accordance with Chapter 464 of the Hawai‘i Revised Statutes. The authority having jurisdiction may require any or all of the following information to be included with or in the plot plan before a permit or approval is issued for a gray water system, or at any time during the construction thereof.”

Section 1604.0(A) is amended to read as follows:

“**1604.0(A)** Plot plan drawn to scale and completely dimensioned, showing lot lines and structures, direction and approximate slope of surface, location of all present or proposed retaining walls, drainage

channels, water supply lines, wells, paved areas and structures on the plot, number of bedrooms and plumbing fixtures in each structure, location of private sewage disposal system or building sewer connecting to the public sewer, and location of the proposed gray water system.”

Section 1607.0 is amended to read as follows:

**“1607.0 Required Area of Subsurface Irrigation/Disposal Fields. (See Figure 16-5.)** The authority having jurisdiction may require that each valved zone shall have a minimum effective irrigation area in square feet as determined by Table 16-2 for the type of soil found in the excavation, based upon a calculation of estimated gray water discharge pursuant to Section 1606.0 of this chapter, or the size of the holding tank, whichever is larger. The area of the irrigation/disposal field shall be equal to the aggregate length of the perforated pipe sections within the valved zone multiplied the width of the proposed irrigation/ disposal field. Each proposed gray water system shall include at least three (3) valved zones, and each zone shall be in compliance with the provisions of the section. No excavation for an irrigation/disposal field shall extend within three (3) vertical feet of the highest known seasonal groundwater, nor to a depth where gray water may contaminate the groundwater or ocean water. The applicant shall supply evidence of groundwater depth to the satisfaction of the authority having jurisdiction.”

Section 1608.0 is amended to read as follows:

**“1608.0 Determination of Maximum Absorption Capacity.**

- (A) Wherever practicable, irrigation/disposal field size shall be computed from Table 16-2 and Table 16-3, or Water Demand based on Evapotranspiration (ET) data.
- (B) In order to determine the absorption quantities of questionable soils other than those listed in Tables 16-2 and 16-3, the proposed site may be subjected to percolation tests acceptable to the authority having jurisdiction.
- (C) When a percolation test is required, no gray water system shall be permitted if the test shows the absorption capacity of the soil is not acceptable as determined by the authority having jurisdiction or is less than eighty-three hundredths (0.83) gallons per square foot (33.8 L/m<sup>2</sup>) or more than five and twelve hundredths (5.12) gallons per square foot (208.5 L/m<sup>2</sup>) of leaching area per twenty-four hours.
- (D) The following formula can be used to estimate the square footage of landscape to be irrigated based on ET data:

$$-LA = GW/(ET \times PF \times 0.62)$$

Where: GW = estimated gray water produced (gallons per week)

LA = landscaped area (ft<sup>2</sup>)

ET = evapotranspiration (inches per week)

PF = plant factor, based on climate and type of plants

0.62 = conversion factor (from inches of ET to gallons per week)”

Section 1611.0 is amended to read as follows:



**“1611.0 Irrigation/Disposal Field Construction. (See Figure 16-5.)** The authority having jurisdiction may permit subsurface drip irrigation, mini-leach field or other equivalent irrigation methods which discharge gray water in a manner which ensures that the gray water does not surface. Design Standards for subsurface drip irrigation systems and mini-leach field irrigation systems are as follows:

(A) Standards for a subsurface drip irrigation system:

- (1) Minimum 140 mesh (115 micron) filter with a capacity of 25 gallons per minute, or equivalent, filtration, sized appropriately to maintain the filtration rate, shall be used. The filter back-wash and flush discharge shall be caught, contained and disposed of to the sewer system, septic tank, or with approval of the authority having jurisdiction, a separate mini-leach field sized to accept all the back-wash and flush discharge water. Filter back-wash water and flush water shall not be used for any purpose. Sanitary procedures shall be followed when handling filter back-wash and flush discharge of gray water.
- (2) Emitters shall have a minimum flow path of 1,200 microns and shall have a coefficient of manufacturing variation (Cv) of no more than seven percent. Irrigation system design shall be such that the emitter flow variation shall not exceed plus or minus ten percent. Emitters shall be recommended by the manufacture for subsurface use and gray water use, and shall have demonstrated resistance to root intrusion.
- (3) Each irrigation zone shall be designed to include no less than the number of emitters specified in Table 16-3, or through a procedure designated by the authority having jurisdiction. Minimum spacing between emitters is 14 inches in any direction.
- (4) The system design shall provide user controls, such as valves, switches, timers, and other controllers as appropriate, to rotate the distribution of gray water between irrigation zones.
- (5) All drip irrigation supply lines shall be polyethylene tubing or PVC class 200 pipe or better and schedule 40 fittings. All joints shall be properly solvent-cemented, inspected and pressure tested at 40 psi, and shown to be drip tight for five minutes, before burial. All supply lines will be buried at least eight inches deep. Drip feeder lines can be poly or flexible PVC tubing and shall be covered to a minimum depth of nine inches.
- (6) Where pressure at the discharge side of the pump exceeds 20 pounds per square inch (psi), a pressure reducing valve able to maintain downstream pressure no greater than 20 psi shall be installed downstream from the pump and before any emission device.
- (7) Each irrigation zone shall include a flush valve/anti-siphon valve to prevent back siphonage of water and soil.

(B) Standards for a mini-leach field system:

- (1) Perforated sections shall be a minimum three (3) inch (80 mm) diameter and shall be constructed of perforated high-density polyethylene pipe, perforated ABS pipe, perforated pvc pipe, or other approved materials, provided that sufficient openings are available for distribution of the gray water in to the trench area. Material, construction, and perforation of the pipe shall be in compliance with the appropriate absorption fields drainage piping standards and shall be approved by the authority having jurisdiction.
- (2) Filter material, clean stone, gravel, slag, or similar filter material acceptable to the authority having jurisdiction, varying in size from three-quarter (3/4) inch (20 mm) to two and one-half (2-1/2) inch (65 mm) shall be placed in the trench to the depth and grade required by

this section. The perforated section shall be laid on the filter material in an approved manner. The perforated section shall then be covered with filter material to the minimum depth required by this section. The filter material shall then be covered with untreated building paper, straw, or similar porous material to prevent closure of voids with earth backfill. No earth backfill shall be placed over the filter material cover until after inspection and acceptance.”

Section 1612.0(A) is amended to read as follows:

“**1612.0(A)** Other collection and distribution systems such as laundry only gray water systems may be approved by the local authority having jurisdiction.”

Table 16-1 is amended as follows:

**“Table 16-1  
Location of Gray Water Systems**

Minimum Horizontal Distance in Clear Required From:	Holding Tank		Irrigation/Disposal Field	
	Feet	(mm)	Feet	(mm)
Building structures <sup>1</sup>	5 <sup>2</sup>	(1,524 mm)	5	(1,524 mm)
Property line adjoining private property	5	(1,524 mm)	5	(1,524 mm)
Water supply wells <sup>4</sup>	550	(15,240 mm)	1,000	(304,800 mm)
Streams and lakes <sup>4</sup>	550	(15,240 mm)	50 <sup>5</sup>	(15,240 mm)
Sewage pits or cesspools	5	(1,524 mm)	5	(1,524 mm)
Disposal field	5	(1,524 mm)	5	(1,524 mm)
Septic tank	0	(0 mm)	5	(1,524 mm)
On-site domestic waterservice line	5	(1,524 mm)	5	(1,524 mm)
Pressurized public water main	10	(3,048 mm)	10 <sup>7</sup>	(3,048 mm)”

Table 16-3 is amended as follows:

**“Table 16-3  
Subsurface Drip Design Criteria for Six Typical Soils**

Type of Soil	Maximum Emitter Discharge (gal/day)	Minimum Number of Emitters per gpd of Gray Water Production
Sand	1.8	0.6
Sandy loam	1.4	0.7
Loam	1.2	0.9
Clay loam	0.9	1.1
Silty clay	0.6	1.6
Clay	0.5	2.0”

Section 1614.0 is amended to read as follows:

“**1614.0 Definitions.**

Reclaimed water is water that, as a result of tertiary treatment of domestic wastewater, is at all times oxidized, then filtered, and then exposed, after the filtration process, to:

- (1) A disinfection process that, when combined with the filtration process, has been demonstrated to inactivate and/or remove 99.999 percent of the plaque-forming units of F-specific bacteriophage MS2, or polio virus in the wastewater. A virus that is at least resistant to disinfection as polio virus may be used for purposes of demonstration; and
- (2) A disinfection process that limits the concentration of fecal coliform bacteria to the following criteria:
  - (A) The median density measure in the disinfected effluent does not exceed 2.2 per 100 milliliters utilizing the bacteriological results of the last seven days for which analyses have been completed; and
  - (B) The density does exceed 23 per 100 milliliters in more than one sample in any 30-day period; and
  - (C) No sample shall exceed 200 per 100 milliliters.

The level of treatment and quality of the reclaimed water shall be approved by the department of health.

Specifically excluded from this definition is gray water, which is defined in Part I of this chapter.

For the purposes of this section, the words “reclaimed” and “recycled” may be used interchangeably.”

Appendix E, Mobile Home Parks is deleted.

Appendix K, Private Sewage Disposal Systems, is amended.

Section K 1(A) is amended by adding the following at the end:

“Construction plans for private sewage disposal systems shall be prepared by or under the supervision of a Hawai‘i licensed engineer registered in the State of Hawai‘i.

All private sewage disposal systems shall be constructed or modified by a person meeting the requirements of Chapter 444, Hawai‘i Revised Statutes (HRS), and any pertinent rules promulgated by the department of commerce and consumer affairs, State of Hawai‘i.”

Section K 1(E) is amended to read as follows:

“The lot area shall not be less than 10,000 square feet except for lots created and recorded before August 30, 1991. For lots less than 10,00 square feet which were created and recorded before August 30, 1991, only one private sewage disposal system shall be allowed. The total wastewater flow into one private sewage disposal system shall not exceed one thousand gallons, and one private sewage disposal system shall not serve more than five bedrooms, whether they are in one dwelling unit or two. For buildings, other than dwellings with highly variable wastewater flow rates, such as but not limited to schools, parks, and churches, the private sewage disposal system may exceed a design flow rate of 1,000 gallons per day.”

Section K 1(J) is amended by adding the following at the end:

“Aerobic systems shall be required for the direct disposal of sewage to groundwater.”

Section K 2 is amended to read as follows:

**“Section K 2 Capacity of Septic Tanks.** The liquid capacity of all septic tanks shall conform to Tables K-2 and K-3 as determined by the number of bedrooms in dwelling occupancies and the estimated waste/sewage design flow rate or the number of plumbing fixture units as determined from Table 7-3 of this Code, whichever is greater in other building occupancies. The capacity of any one septic tank and its drainage system shall be limited by the soil structure classification, as specified in Table K-4.”

Section K 3 is amended to read as follows:

**“Section K 3 Area of Disposal Fields and Seepage Pits.** The minimum effective absorption area in disposal fields in square feet (m<sup>2</sup>) of sidewall, shall be predicated on the required septic tank capacity in gallons (liters) and/or estimated waste/sewage flow rate, whichever is greater, and shall conform to Table K-4 as determined for the type of soil found in the excavation. The minimum effective absorption area could also be based upon a flow of 200 gallons per bedroom per day in accordance with Table K-6. Soil percolation tests shall be conducted at a minimum depth of three feet.”

Section K 4(C) is amended by amending the first sentence to read as follows:

**“Section K 4 Percolation Tests.** When a percolation test is required, the test shall be conducted at a minimum depth of three feet, and no private disposal system shall be permitted to serve a building if that test shows the absorption capacity of the soil is less than 0.83 gallons per square foot (33.8 L/m<sup>2</sup>) or more than 5.12 gallons per square foot (208 L/m<sup>2</sup>) of leaching area per 24 hours.”

Section K 5(N)(1) is amended to read as follows:

**“Section K 5 Septic Tank Construction.** The septic tank shall be certified by IAPMO or a third party certification body accredited in accordance with ISO Guide 65, entitled “General Requirements for bodies operating product certification systems.”

Section K 7(C) is amended by amending the first sentence to read as follows:

**“Section K 7 Seepage Pits.** Each seepage pit shall be circular in shape and shall have an excavated diameter of not less than six (6) feet (1,829 mm).”

Table K-1 Location of Sewage Disposal System, is amended by revising the minimum horizontal distances to be consistent with Chapter 11-62, “Wastewater Systems,” distances.

**“Table K-1  
Location of Sewage Disposal System  
April 2009**

Min. Horizontal Distance in Clear Required From:	Building Sewer	Septic Tank	Disposal Field	Seepage Pit or Cesspool
Buildings or structures <sup>1</sup>	2 feet (610 mm)	5 feet (1,524 mm)	8 feet (2,438 mm)	8 feet (2,438 mm)

Property line adjoining private property	Clear <sup>2</sup>	5 feet (1,524 mm)	5 feet (1,524 mm)	8 feet (2,438 mm)
Water supply wells	50 feet <sup>3</sup> (15,240 mm)	50 feet (15,240 mm)	1,000 feet (304,800 mm)	150 feet (45.7 mm)
Streams and other bodies of water	50 feet (15,240 mm)	50 feet (15,240 mm)	100 feet <sup>7</sup> (30,480 mm) <sup>7</sup>	150 feet <sup>7</sup> (45.7 mm)
Trees	–	10 feet (3,048 mm)	–	10 feet (3,048 mm)
Seepage pits or cesspools	–	5 feet (1,524 mm)	5 feet (1,524 mm)	12 feet (3,658 mm)
Disposal field	–	5 feet (1,524 mm)	4 feet <sup>4</sup> (1,219 mm)	5 feet (1,524 mm)
On-site domestic water service line	1 foot <sup>5</sup> (305 mm)	5 feet (1,524 mm)	5 feet (1,524 mm)	5 feet (1,524 mm)
Distribution box	–	–	5 feet (1,524 mm)	5 feet (1,524 mm)
Pressure public water main	10 feet <sup>6</sup> (3,048 mm)	10 feet (3,048 mm)	10 feet (3,048 mm)	10 feet (3,048 mm)

Note:

When disposal fields and/or seepage pits are installed in sloping ground, the minimum horizontal distance between any part of the leaching system and ground surface shall be fifteen (15) feet (4,572 mm).

<sup>1</sup> Including porches and steps, whether covered or uncovered, breezeways, roofed porte cocheres, roofed patios, carports, covered walks, covered driveways, and similar structures or appurtenances.

<sup>2</sup> See also Section 313.3 of the Uniform Plumbing Code.

<sup>3</sup> All drainage piping shall clear domestic water supply wells by at least fifty (50) feet (15,240 mm). This distance may be reduced to not less than twenty-five (25) feet (7,620 mm) when the drainage piping is constructed of materials approved for use within a building.

<sup>4</sup> Plus two (2) feet (610 mm) for each additional one (1) foot (305 mm) of depth in excess of one (1) foot (305 mm) below the bottom of the drain line. (See also Section K 6.)

<sup>5</sup> See Section 720.0 of the Uniform Plumbing Code.

<sup>6</sup> For parallel construction – For crossings, approval by the Health Department shall be required.

<sup>7</sup> These minimum clear horizontal distances shall also apply between disposal fields, seepage pits, and the mean high tide line.”

Table K-2 Capacity of Septic Tanks, is amended as follows:

Under column “Single-Family Dwellings-Number of Bedrooms,” delete “1 or 2 and 3” and replace with “4 or less.”

Under column “Multiple Dwelling Units or Apartments-One Bedroom Each,” delete “3 through 10.”

Delete entire column “Other Uses: Maximum Fixture Units Served per Table 7-3.”

Under column “Gallons,” delete “750”; delete “1,200” and replace with “1,250”; delete “1,500 to 3,500.”

Under column “Minimum Septic Tank Capacity in (Liters),” delete “7570 through 13,248”; delete “1,200” and replace with “1,250”; delete “1,500 to 3,500.”

Delete “\*Note: Extra Bedroom, 150 gallons (568 liters) each. Extra dwelling units over 10: 250 gallons (946 liters) each. Extra fixture units over 100: 25 gallons (95 liters) per fixture unit.”

**“Table K-2  
Capacity of Septic Tanks\*  
April 2009**

Single-Family Dwellings - Number of Bedrooms	Multiple Dwelling Units or Apartments - One Bedroom Each	Minimum Septic Tank Capacity in	
		Gallons	(Liters)
4 or less	-	1,000	(3,785)
5	2 units	1,250	(4,731)

Septic tank sizes in this table include sludge storage capacity and the connection of domestic food waste disposal units without further volume increase.”

Table K-6, Minimum Required Absorption Area, dated April 2009, located at the end of this Chapter is added.

**“Table K-6  
Minimum Required Absorption Area  
April 2009**

Percolation Rate (min/inch) Less than or equal to	Required Absorption Area (ft <sup>2</sup> /bedroom or 200 gallons)	Percolation Rate (min/inch) Less than or equal to	Required Absorption Area (ft <sup>2</sup> /bedroom or 200 gallons)
1	70	31	253
2	85	32	257
3	100	33	260
4	115	34	263
5	125	35	267
6	133	36	270
7	41	37	273
8	149	38	277
9	157	39	280
10	165	40	283
11	170	41	287
12	175	42	290
13	180	43	293
14	185	44	297
15	190	45	300
16	194	46	302
17	198	47	304
18	202	48	306
19	206	49	308
20	210	50	310
21	214	51	312
22	218	52	314
23	222	53	316

24	226	54	318
25	230	55	320
26	234	56	322
27	238	57	324
28	242	58	326
29	246	59	328
30	250	60	330"

(Ord. No. 951, October 14, 2013)

**Article 3. Plumbing Work Within Special Flood Hazard Areas  
and Developments Adjacent to Drainage Facilities**

**Sec. 14-3.1 Applicability.**

(a) General. The provisions contained herein are applicable to the construction of all new plumbing systems, renovations and major alterations, additions or reconstruction of existing plumbing systems within the special flood hazard area as delineated on the Flood Boundary and Floodway Maps and Flood Insurance Rate Maps, and any amendments by the Federal Emergency Management Agency, on file with the Department of Public Works, County of Kaua‘i.

These provisions shall also apply to development drainage facilities outside the special flood hazard areas which are determined to be within a floodway area or a flood fringe area in accordance with Article 1, Chapter 15, of the Kaua‘i County Code 1987, as amended.

(b) Existing Plumbing Systems, Any plumbing system thereof which was lawful before the effective date of the ordinance codified in this Article but which is not in conformity with the provisions of this Article may be continued subject to the provisions of Kaua‘i County Code 1987, as amended.

(c) Exemptions. The provisions contained herein shall not apply:

- (1) To plumbing systems serving buildings and structures exempted from the special flood hazard area provisions under Article 1, Chapter 15, Kaua‘i County Code 1987, as amended.
- (2) To plumbing systems serving building and structures which have been granted a Flood Hazard Variance under provisions of Article 1, Chapter 15, Kaua‘i County Code 1987, as amended. (Ord. No. 951, October 14, 2013)

**Sec. 14-3.2 Definitions.**

For the purpose of this Article, the following terms shall be as defined in Article 1, Chapter 15, Kaua‘i County Code 1987, as amended:

- (a) Base flood;
- (b) Base flood elevation;
- (c) Coastal high hazard area;
- (d) Flood or flooding;
- (e) Flood fringe area;
- (f) Floodway;
- (g) General flood plain area;

- (h) Lowest floor;
- (i) Special flood hazard area;
- (j) Tsunami. (Ord. No. 951, October 14, 2013)

**Sec. 14-3.3 Drainage (Plumbing) Systems.**

- (a) Drainage systems that have openings below the base flood elevation shall be provided with an automatic backwater valve installed in each discharge line passing through a building exterior wall.
- (b) Drainage systems for emergency servicing facilities that are required to remain in operation during a flood shall be provided with a sealed holding tank and the necessary isolation and diversion piping and appurtenances to withhold or postpone sewage discharge to the sewer system during the flood. The holding tank shall be sized for storage of at least one hundred fifty percent (150%) of the anticipated demand for a twenty-four (24) hour period. Vents provided for such holding tank shall terminate at an elevation of at least one (1) foot above the base flood elevation.
- (c) All pipes in a plumbing vent system shall terminate at an elevation of at least one (1) foot above the base flood elevation.
- (d) All pipe openings through exterior walls below the base flood elevation shall be flood proofed to prevent infiltration of flood water through spaces between pipes and wall construction materials by use of imbedded collars, sleeves, water stops, or other means as may be approved by the administrative authority. (Ord. No. 951, October 14, 2013)

**Sec. 14-3.4 Private Sewage Disposal/Treatment.**

Individual private sewage disposal systems or treatment facilities may be permitted in a special flood hazard area when design and location of such systems are approved by the Department of Health, State of Hawai‘i. In addition to the Administrative Rules, Department of Health, State of Hawai‘i, all such new and replacement sewage disposal systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters. (Ord. No. 951, October 14, 2013)

**Sec. 14-3.5 Water Supply.**

Potable water supply systems that are located in a special flood hazard area or in other floodway or flood fringe area shall be designed and installed in such a manner as to prevent contamination from flood waters up to the base flood elevation. Location and construction of private water supply wells shall comply with rules and regulations of the Department of Water, County of Kaua‘i.

- (a) Potable water supply tanks, filters, softeners, heaters, and all water-supplied appliances and fixtures shall be elevated above the base flood elevation. All vent pipes serving the water supply system shall terminate at an elevation of at least one (1) foot above the base flood elevation.
- (b) Backflow preventers or devices approved by the Department of Water shall be installed on water service lines as close to the property control valve as possible to protect the public water system from backflow or back siphonage of flood waters or other contaminants in the event of a line break. Devices shall be installed at accessible locations and shall be maintained in good working condition by the owner. The backflow preventers or devices shall be subject to periodic testing and inspection as prescribed in the Rules and Regulations of the Department of Water, County of Kaua‘i.



- (c) An approved double check valve assembly shall be used in lieu of any vacuum breaker, permitted, or otherwise required under Article 4, when located below the base flood elevation.
- (d) Air relief valves are permitted on private pipelines only when installed at least one (1) foot above the base flood elevation. (Ord. No. 951, October 14, 2013)

**Sec. 14-3.6 Plumbing Systems in Special Flood-Proofed Conditions.**

Plumbing piping under buildings constructed on stilts shall be securely anchored against lateral movement and flotation and protected against damage by flood water and debris. Protection shall be provided by the structural enclosure of such piping or by attaching such piping to the downstream side of structural members which are large enough to provide this protection. (Ord. No. 951, October 14, 2013)

**Article 4. Energy Conservation**

**Sec. 14-4.1 General Provisions.**

The purposes of this Article are to:

- (a) Set minimum requirements for the energy-efficient design of new buildings so that they may be constructed, operated, and maintained in a manner that minimizes the use of energy without constraining the building function or the comfort or productivity of the occupants; and
- (b) Provide criteria for energy-efficient design and provide methods for determining compliance with these criteria. (Ord. No. 951, October 14, 2013)

**Sec. 14-4.2 Applicability.**

All plumbing requirements and criteria of Article 6, Chapter 12, Building Code, Kaua‘i County Code 1987, as amended, relating to Energy Conservation, shall be part of this Code. These requirements shall be inspected and enforced as part of the Plumbing Code. (Ord. No. 951, October 14, 2013)

**Sec. 14-4.3 Solar Energy System.**

- (a) Solar Energy Collectors. Collectors that function as plumbing components shall comply with the applicable provision of this Code and other pertinent ordinances.

Collectors located above or upon a roof and functioning as a building component shall not reduce the required fire-resistance or fire-retardancy classification of the roof covering materials as required in the Building Code.

- (b) Permit Required. No person shall install any solar energy system on any premises, building, or structure within the County, or cause the foregoing to be done, without first obtaining a solar energy permit, issued under the authority of this Section.
- (c) Plans and Specifications. Plans, specifications and other data shall be submitted as required in Sec. 103.2.2 of the Uniform Plumbing Code.
- (d) Permit Issuance. The issuance of the permit and fees shall be in accordance with the requirements set forth in Chapter 12, Building Code, Kaua‘i County Code 1987, as amended, regarding solar energy system.

- (e) Definitions. The following definitions shall be used to provide ordinarily accepted meanings to the following terms which are not specifically defined in this Code:

Solar Energy Collectors. A collecting device or array panel used to absorb energy from the sun.

Solar Energy System. Any configuration of equipment and components used to collect, convey, store and convert the sun's energy for a purpose.

Solar Water Heating System. Any configuration of equipment and components assembled to collect, convey, store and convert the sun's energy primarily to supply hot water. (Ord. No. 951, October 14, 2013)