
A BILL FOR AN ACT

RELATING TO ENERGY.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

1 SECTION 1. The legislature finds that the State should
2 upgrade the performance standard on roofs for all new
3 residential and commercial construction projects by mandating
4 the use of only cool roof materials. The use of cool roofs will
5 facilitate a decrease in dependency on foreign oil by the State
6 and assist in reaching the goal of producing seventy per cent of
7 the State's energy from clean sources by 2011.

8 A cool roof is a special roofing material that
9 significantly reduces heat absorption due to two special
10 qualities: high solar reflectance, or albedo, which reflects
11 light, and high thermal emittance, which emits a high percentage
12 of any heat absorbed by the roof back into the atmosphere. The
13 effect results in a cooler building and reduced energy costs for
14 buildings with cooling systems by an average of seven to fifteen
15 per cent. While the cost of cool roofing materials is slightly
16 higher when compared to traditional roofing materials, a
17 building owner may recover the extra cost of the cool roof

1 within three to five years, if not sooner, depending upon the
2 cost of electricity and the specifics of the building.

3 In addition to reducing the building's cooling costs, cool
4 roofs will also offset carbon dioxide emissions that contribute
5 to global warming. A one thousand square foot roof would offset
6 ten metric tons of carbon dioxide by reducing the need to use
7 electricity to cool the building. Cool roofs also combat the
8 heat island effect, which is a condition that occurs in urban
9 areas like downtown Honolulu where buildings and surrounding
10 infrastructure retain heat and increase the ambient air
11 temperature. The United States Environmental Protection Agency
12 estimates that over the last several decades, approximately
13 three to eight per cent of all energy used was to combat the
14 heat island effect. Installation of cool roofs will decrease
15 the heat island effect and lower energy usage.

16 The purpose of this Act is to promote energy conservation,
17 reduce the State's dependence on foreign oil, and decrease the
18 heat island effect by establishing specific performance
19 standards mandating the use of cool roofs in all new residential
20 and commercial construction in Hawaii.

1 SECTION 2. The Hawaii Revised Statutes is amended by
2 adding a new chapter to be appropriately designated and to read
3 as follows:

4 "CHAPTER
5 COOL ROOFS

6 § -1 **Definitions.** As used in this chapter, except as
7 otherwise specifically provided herein:

8 "Cool roof" means a roof constructed with cool roof
9 materials.

10 "Cool roof material" means:

11 (1) Any variety of roofing material that has a high solar
12 reflectance and high thermal emittance, carries the
13 United States Environmental Protection Agency's ENERGY
14 STAR label, and meets the standards of the United
15 States Environmental Protection Agency's ENERGY STAR
16 system for low sloped roofs or steep sloped roofs, as
17 applicable; or

18 (2) All roofing materials that have a solar reflectance of
19 not less than 0.25 for steep sloped buildings, and
20 0.65 for low sloped buildings.

21 "Low sloped roof" means the roof has less than two inches
22 of rise over twelve inches of run.

1 "New construction" means any new construction of a
2 residential structure, including single-family and multi-family
3 residential properties, and any new construction of a commercial
4 structure, including construction for businesses of any kind.

5 "Steep slope roof" means the roof has more than two inches
6 of rise over twelve inches of run.

7 § -2 **Requirements.** On or after January 1, 2011, no
8 permit shall be issued for new construction, unless the
9 structure's roof is constructed using cool roof materials. If a
10 cool roof version is unavailable in a specific roofing material,
11 a radiant barrier may be installed as per the recommended
12 manufacturer's specifications (for example, a radiant barrier
13 may be used in combination with a cedar shingle roof).

14 This section shall not apply to new residential structures
15 that do not utilize heating or cooling systems that require
16 additional energy generation.

17 § -3 **Exemptions.** (a) A variance may be requested by
18 application to the energy resources coordinator of the
19 department of business, economic development, and tourism;
20 provided that solar energy systems under subsection (b) shall
21 not require a variance. The application shall include a
22 description of the property and detailed explanation justifying

1 the request for the variance. A variance shall be deemed
2 approved if not denied by the energy resources coordinator
3 within thirty working days of the energy resource coordinator's
4 receipt of the variance application. A variance shall be
5 granted only if the detailed findings by the energy resources
6 coordinator establish that the cool roof will not significantly
7 reduce the energy consumption of the residential or commercial
8 building.

9 (b) That portion of a roof that is or will be covered by a
10 solar energy system shall not be required to utilize cool roof
11 materials as defined in section -2.

12 § -4 **Enforcement; powers of counties.** (a) All counties
13 in the State shall adopt and enforce rules, ordinances, and
14 guidelines to take all reasonable actions to implement and
15 enforce this chapter.

16 (b) The appropriate county agency shall enforce this
17 chapter through the building inspection process. The building
18 inspector shall confirm, as part of the regular inspection
19 process, including inspection of the documentation required to
20 be submitted by the builder, that the roof material qualifies as
21 a cool roof in accordance with this chapter."

22 SECTION 3. This Act shall take effect on July 1, 2009.

Report Title:

Cool Roofs; Residential Construction; Commercial Construction;
Energy Conservation

Description:

Establishes specific performance standards and mandates the use
of cool roofs on all new residential and commercial construction
in Hawaii beginning in 2011. (SD2)