

JAN 16 2014

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# 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 of 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 Hawaii clean energy initiative goal  
7 of producing seventy per cent of the State's energy from clean  
8 sources by 2030.

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



1 years, depending upon the cost of electricity and the specifics  
2 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 cool roof would  
6 offset ten metric tons of carbon dioxide by reducing the amount  
7 of electricity needed to cool the building. Cool roofs also  
8 combat the heat island effect, which is a condition that occurs  
9 in urban areas like downtown Honolulu where buildings and  
10 surrounding infrastructure retain heat and increase the ambient  
11 air temperature. The United States Environmental Protection  
12 Agency estimates that over the last several decades,  
13 approximately three to eight per cent of all energy used was to  
14 combat the heat island effect. Installation of cool roofs will  
15 decrease 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 roofs, and 0.65  
20 for low sloped roofs.

21 "Low sloped roof" means a roof that has less than two  
22 inches 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 a roof that has more than two  
6 inches of rise over twelve inches of run.

7 **§ -2 Requirements.** On or after January 1, 2015, 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 use electrical or other energy-consuming cooling  
16 systems.

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 -1.

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



1 SECTION 3. This Act shall take effect on July 1, 2014.

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# S.B. NO. 2180

**Report Title:**

Cool Roofs; Residential Construction; Commercial Construction;  
Energy Conservation

**Description:**

Prohibits the issuance of permits for new residential and commercial construction in Hawaii beginning on January 1, 2015, unless the structure's roof is constructed using cool roof materials. Establishes specific performance standards for cool roofs.

*The summary description of legislation appearing on this page is for informational purposes only and is not legislation or evidence of legislative intent.*

