The Florida Senate

BILL ANALYSIS AND FISCAL IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

Prepared By: The Professional Staff of the Environmental Preservation and Conservation Committee

BILL:	SB 1032
INTRODUCER:	Senator Benacquisto
SUBJECT:	Thermal Efficiency Standards
DATE:	January 22, 2012
REVISED:	

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Wiggins	Yeatman	EP	**Pre-meeting**
2.			BC	
3.				
4.				
5.				
6.				

I. Summary:

The bill requires the Department of Environmental Protection (DEP) and the applicable water management district to grant a general permit in certain surface water management systems to begin construction, if certain conditions are met, without further action by DEP or the applicable water management district.

The bill provides definitions for "ballasted roof," "hardscape," "heat island effect," "low-sloped roof," "solar reflectance," or "reflectance," and "steep-sloped roof."The bill establishes minimum thermal efficiency standards for roof coverage for buildings and structures. The bill adds specific minimum reflectance standards for low-sloped roofs, ballasted roofs, and steep-sloped roofs. It mandates that all roof exterior surfaces and roofing materials of a thermal-efficient roof have a minimum reflectance with certification from specified testing entities.

The bill establishes a minimum efficiency standard for hardscapes such as roofs, sidewalks, and parking lots. The bill establishes specific minimum reflectance and testing standards for paving materials.

The bill amends s. 403.814 and s. 553.902, F.S., and creates s. 553.9045 and s. 553.9046, F.S.

II. Present Situation:

A no-notice general permit can be granted for the construction or alteration of minor systems located entirely within uplands, provided that the proposed system meets certain criteria, which

include a total project area of less than 10 acres of which 2 acres are of impervious[1] surface.[2] The South Florida Water Management District is the only water management district that utilizes this no-notice permit option for areas that utilize a certain ratio of acres of land to impervious surfaces. This type of permit may be utilized for activities that have been determined to have minimal adverse impacts to the water resources of the district, both individually and cumulatively. Miami Dade County Department of Environmental Resource Management or its successor agency must still approve the project.[3]

Chapter 13 of the Energy Code of the Florida Building Code (FBC), Building Volume, provides for construction standards for energy efficiency in the thermal design and operation of all buildings statewide. The Energy Code is a performance-based code which accounts for improvement in the solar reflectance of specific roof products without imposing a minimum standard for solar reflectance on roofs. Testing to a specific standard is required for demonstrating specific reflectance performance of a roofing product.[4]

According to the Environmental Protection Agency (EPA), the term "heat island effect" describes built up areas that are hotter than nearby rural areas. The annual mean air temperature of a city with 1 million people or more can be 1.8–5.4°F (1–3°C) warmer than its surroundings. In the evening, the difference can be as high as 22°F (12°C). Heat islands can affect communities by increasing summertime peak, energy demand, air conditioning costs, air pollution and greenhouse gas emissions, heat-related illness and mortality, and water quality.[5]

According to the EPA, the extent to which urban areas can benefit from heat island reduction strategies depends on a number of factors—some within and some outside of a community's control. Although prevailing weather patterns, climate, geography, and topography are beyond the influence of local policy, decision makers can select a range of energy-saving strategies that will generate multiple benefits, including vegetation, landscaping, and land use design projects, and improvements to building and road materials.

Trees, vegetation, and green roofs can reduce heating and cooling energy use and associated air pollution and greenhouse gas emissions, remove air pollutants, sequester and store carbon, help lower the risk of heat-related illnesses and deaths, improve stormwater control and water quality, reduce noise levels, create habitats, improve aesthetic qualities, and increase property values. Cool roofs can lower cooling energy use, peak electricity demand, air pollution and greenhouse gas emissions, heat-related incidents, and solid waste generation due to less frequent re-roofing. Cool pavements can indirectly help reduce energy consumption, air pollution, and greenhouse gas emissions. Depending on the technology used, cool pavements can improve stormwater

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[1] **Impervious surfaces** are mainly artificial structures--such as pavements (roads, sidewalks, driveways and parking lots) that are covered by impenetrable materials such as asphalt, concrete, brick, and stone--and rooftops. Soils compacted by urban development are also highly impervious. http://en.wikipedia.org/wiki/Impervious_surface, (last visited Jan. 22, 2012).

[2] 40E-400.315, Florida Administrative Code .

[3] *Id.*

[4] Florida Department of Business and Professional Regulation, Senate Bill 1032 Analysis (Dec. 9, 2011) (on file with Senate Committee on Environmental Preservation and Conservation).

[5] United States Environmental Protection Agency, EPA Home, Heat Island Effect, http://www.epa.gov/hiri/ (last visited Jan. 22, 2012).

management and water quality, increase surface durability, enhance nighttime illumination, and reduce noise.

According to the EPA, using these strategies in combination can enhance their effectiveness. For example, installing a permeable pavement parking lot that includes shade trees can extend the longevity of the pavement and vegetation. Widespread implementation of these strategies also provides additional benefits. For example, a single cool roof will mainly result in benefits to the building owner and occupants. Community-wide cool roof installations, though, will provide savings to the building owner and occupants and to the community at large, as a large number of cool roofs can reduce air temperatures, resulting in multiple benefits associated with cooler summertime air.[6]

III. Effect of Proposed Changes:

Section 1 amends s. 403.814, F.S., to require that the Department of Environmental Protection (DEP) and the applicable water management districts grant a general permit for the construction, alteration, and maintenance authorizing the construction of certain surface water management systems to proceed without further action by DEP or the water management district.

Section 2 amends s. 553.902, F.S., and provides definitions for the terms "ballasted roof," "hardscape," "heat island effect," "low-sloped roof," "solar reflectance," or "reflectance," and "steep-sloped roof."

Section 3 creates s. 553.9045, F.S., and provides for a thermal-efficient roof; provides standards for a thermal-efficient roof; requires that roof exterior surfaces and roofing material of a thermal-efficient roof have a minimum solar reflectance; provides testing standards; and provides exceptions.

Section 4 creates s. 553.9046, F.S., defines thermal-efficient hardscapes, and provides default reflectance values for certain paving materials.

Section 5 provides an effective date.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

[6] United States Environmental Protection Agency, EPA Home, Heat Island Effect, http://www.epa.gov/hiri/ (last visited Jan. 22, 2012).

C. Trust Funds Restrictions:

None.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

According to DBPR, the proposed legislation will have a significant fiscal impact on the roofing manufacturers who would be required to retest their products and retool their manufacturing process. DBPR also notes that there is also the potential of limiting the type of roof covering capable of installation in Florida and this is likely to raise the price of roofing products and cost of construction.[7]

The bill will make it difficult for Florida roofing manufacturers to compete with other roofing manufacturers who sell their products in other states because the Florida roofing products will cost more to produce.[8]

C. Government Sector Impact:

The South Florida Water Management District would need to evaluate the proposed permit changes as the established rule is for 10 acre projects not 15 as proposed in the bill. The requirement of only 2 acres (no more than 5 acres) of impervious surface of the 15 acre project may not be a large enough ratio to grant a general permit.

DBPR will have to include the new definitions and requirements into future editions of the Florida Building Code.[9]

VI. Technical Deficiencies:

None.

VII. Related Issues:

According to DBPR, the bill conflicts with definitions in existence in the FBC. DPBR states that the bill redefines those terms in a manner that is inconsistent with the FBC and with national standards and model codes. The bill conflicts with the Florida Energy Code by mandating the use of particular types of roofing products, rather than allowing the use of a performance-based

[7] Florida Department of Business and Professional Regulation, Senate Bill 1032 Analysis (Dec. 9, 2011) (on file with Senate Committee on Environmental Preservation and Conservation).
[8] *Id.*
[9] *Id.*

approach to energy conservation that accounts for improvement in the solar reflectance of specific roof products without imposing a minimum standard for solar reflectance on roofs. [10]

DBPR states that, with exception to the terms "hardscape" and "heat island effect" which fall outside the technical scope of the FBC, definitions of terms as provided in the proposed legislation are not consistent with those of the FBC or nationally recognized standards and model codes. Although highly reflective roofs may have the potential of saving energy in Florida, DBPR points out that it is questionable whether such savings can be sustained through the life of the roofs. In fact, a roof's reflectance loses much of its beneficial impact fairly quickly because it gets dirty over time and is seldom cleaned. In addition, the proposed legislation could be perceived as a market restriction of roofing products by favoring a particular product over another.[11]

According to DBPR, establishing minimum thermal efficiency standard hardscapes for sidewalks, courtyards and parking lots does not fall under the administrative and technical scope of the FBC as established by law. It more properly falls under the business functions of the Department of Transportation and local jurisdiction/ public works departments.[12]

VIII. Additional Information:

A. Committee Substitute – Statement of Substantial Changes:
(Summarizing differences between the Committee Substitute and the prior version of the bill.)

None.

B. Amendments:

None.

[10] *Id.*
[11] *Id.*
[12] *Id.*