



# City of Miami

## Legislation

### Ordinance

City Hall  
3500 Pan American  
Drive  
Miami, FL 33133  
www.miamigov.com

File Number: 09-00954zt

Final Action Date:

AN ORDINANCE OF THE MIAMI CITY COMMISSION AMENDING ORDINANCE NO. 11000, AS AMENDED, THE ZONING ORDINANCE OF THE CITY OF MIAMI, FLORIDA, TO CREATE SECTION 952 ENTITLED "HEAT ISLAND EFFECT-NON ROOF" TO ADD SECTIONS THAT PROVIDE FOR ENVIRONMENTALLY-RESPONSIBLE METHODS FOR COOLING AND SHADING OF HARDSCAPES IN THE CITY OF MIAMI; CONTAINING A SEVERABILITY CLAUSE; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Miami ("City") is committed to reducing elevated temperatures and associated air-quality issues stemming from urban heat island effects; and

WHEREAS, during the past eight (8) years, the City has launched a comprehensive and aggressive environmental program to clean streets, waterways, brownfields, storm drains, and to improve air and water quality; and

WHEREAS, the City Commission has adopted the recommendations of MiPlan, the City's Climate Action Plan, which promotes various methods to achieve reduction in energy consumption which is adversely affected by elevated temperatures in the urban-core; and

WHEREAS, elevated temperatures from heat island effects in urban areas result in increased energy consumption for cooling; increased greenhouse gas emissions associated with building and vehicle usage; and deterioration in air quality; and

WHEREAS, hardscape management methods, such as tree planting, shading, and use of reflective paving materials, will contribute to decreasing the urban heat island effect, which can reduce the energy consumption of buildings;

WHEREAS, the Miami Planning Advisory Board, at its meeting held on September 16, 2009, Item No. P.10, following and advertised public hearing, adopted Resolution No. PAB 09-034 by a vote of seven to zero (7-0), recommending approval as presented;

NOW, THEREFORE, BE IT ORDAINED BY THE COMMISSION OF THE CITY OF MIAMI, FLORIDA, AS FOLLOWS:

Section 1. The recitals and findings in the Preamble to this ordinance are adopted by reference and incorporated as if fully set forth in this Section.

Section 2. Article 9 of Ordinance No. 11000, the Zoning Code of the City of Miami, Florida, to create section 952 entitled "Heat Island Effect - Non-Roof" is amended in the following particulars:{1}

"ARTICLE 9. GENERAL AND SUPPLEMENTARY REGULATIONS

\* \* \*

## Section 952. Heat Island Effect - Non-Roof

### 952.1 Intent

The requirements of this ordinance are intended to reduce the heat island effect from hardscapes in the City of Miami and to consequently reduce energy consumption and bills for buildings within the City.

### 952.2 Definitions

Hardscape means the nonliving portions of a building's landscaping, such as roads, sidewalks, courtyards and parking lots

Heat island effect is an elevated temperature over an urban area when compared to rural areas, typically caused by the increased presence of dark, heat absorbing materials, such as asphalt and dark roofs, in urban areas.

Solar reflectance is the fraction of solar energy reflected by a material.

Pervious Pavement System is a porous surface system with a stabilized base that allows water from precipitation and other sources to pass directly through, thereby reducing the runoff from a site, allowing groundwater recharge, and naturally cooling the surface through evaporation of water from pavement voids or from beneath.

### 952.3 Applicability

The provisions of this ordinance are applicable in all zoning designations throughout the City, except they shall not apply in R1 and R2, to newly constructed buildings and to replacement of greater than 50% of site hardscape after the effective date of this ordinance. All replacement of existing hardscape shall be reviewed by the Zoning Department for compliance with this ordinance.

### 952.4 Solar reflectance

Solar reflectance shall be determined as follows:

- (a) For roofing materials, all roof exterior surfaces and building materials used to comply with Section 952.4 shall have a minimum solar reflectance as specified in Sections 952.4 when (i) tested in accordance with ASTM E903 or ASTM E1918, (ii) tested with a portable reflectometer at near ambient conditions, (iii) labeled by the Cool Roof Rating Council, or (iv) labeled as an Energy Star qualified roof product. Any product that has been rated by the Cool Roof Rating Council or by Energy Star shall display a label verifying the rating of the product.
- (b) For paving materials, all paving materials used to comply with Section 952.4 shall have a minimum solar reflectance as specified in Sections 952.4 when (i) tested in accordance with ASTM E903 or ASTM E1918, (ii) tested with a portable reflectometer at near ambient conditions, or (iii) default values of solar reflectance for listed materials may be used as follows:

**TABLE INSET:**

<u>Material</u>	<u>Solar Reflectance</u>
<u>Typical new gray concrete</u>	<u>0.35</u>
<u>Typical weathered gray concrete</u>	<u>0.20</u>
<u>Typical new white concrete</u>	<u>0.70</u>
<u>Typical weathered white concrete</u>	<u>0.40</u>
<u>New asphalt</u>	<u>0.05</u>
<u>Weathered asphalt</u>	<u>0.10</u>

952.5 Requirements

Sites with new construction shall be required to comply with the following:

(a) Provide any combination of the following strategies for fifty percent (50%) of the site hardscape:

- (i) Shade from solar panels or roofing materials with a solar reflectance of at least 0.30.
- (ii) Shade from trees within five (5) years of occupancy.
- (iii) Paving materials with a solar reflectance of at least 0.30.
- (iv) Pervious pavement system.

OR

(b) Place a minimum of fifty-percent (50%) of parking spaces under cover (defined as underground, under deck, under roof, or under building). Any roof used to shade or cover parking must have a solar reflectance of at least 0.30.

\* \* \*

Section 3. If any section, part of section, paragraph, clause, phrase or word of this Ordinance is declared invalid, the remaining provisions of this Ordinance shall not be affected.

Section 4. This Ordinance shall become effective thirty (30) days after approval its adoption and signature of the Mayor.{2}

APPROVED AS TO FORM AND CORRECTNESS:

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JULIE O. BRU   
CITY ATTORNEY

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Footnotes:

{1} Words and/or figures stricken through shall be deleted. Underscored words and/or figures shall be added. The remaining provisions are now in effect and remain unchanged. Asterisks indicate omitted and unchanged material.

{2} This Ordinance shall become effective as specified herein unless vetoed by the Mayor within ten days from the date it was passed and adopted. If the Mayor vetoes this Ordinance, it shall become effective immediately upon override of the veto by the City Commission or upon the effective date stated herein, whichever is later.