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Int. No. 347-A

By Council Member Garodnick, Brewer, Chin, Comrie, Fidler, Gentile, Gonzalez, James, Koppell, Lander, Mark-Viverito, Nelson, Palma, Sanders Jr., Vann, Williams, Rodriguez, Gennaro, Van Bramer, Levin, Lappin, Recchia, Vallone, Crowley, Jackson, Koo, Wills, Barron and Greenfield

A Local Law to amend the administrative code of the city of New York and the New York city building code, in relation to roof coating standards.

Be it enacted by the Council as follows:

Section 1. Legislative findings and intent. The Council finds that the use of cool roofs as a mitigation strategy for the "urban heat island effect"-- the tendency of urban areas to be hotter than their suburban surroundings because of dark absorbent surfaces and a lack of vegetation--can result in lower energy use and reduced air pollution and greenhouse gas emissions, while at the same time improving health and comfort in warm weather. A cool roof transfers less heat to the building below so that the building stays cooler and more comfortable during the summer, resulting in the use of less energy for cooling. A cool roof coating also increases the durability of the roof membrane because it is subject to reduced thermal cycling amplitude and UV radiation. At the same time local climate and site specific factors play a role in the amount of savings achieved. Cool roofs result in energy savings when they are most needed, during very hot summer periods subject to peak electrical demand. The disadvantages over the heating season, known as the "winter penalty", have been found to be minimal in studies of New York City's installations. The Council further finds that studies show that North Atlantic states with relatively long heating seasons may nonetheless benefit and reap net savings from cool roofs because of high electricity costs in places like New York City. On a global level, implementing the proposal will also help combat global warming, because light is reflected into space rather

than being turned into heat, which is then trapped in the CO_2 blanket. Further, to the extent that energy demand is lessened, it can result in fewer air emissions and air quality related environmental diseases. New York City began addressing these issues by incorporating a requirement for white roofs in its last code cycle. Therefore, the Council finds that it is in the best interests of New York City to strengthen its roof coating standards to require the use of more reflective and emissive materials.

§2. Section 28-101.4.3 of the administrative code of the city of New York is amended by adding a new item 11 to read as follows:

11. Alterations involving the recovering or replacing of an existing roof covering shall comply with section 1504.8 of the New York city building code unless the area to be recovered or replaced is less than 50 percent of the roof area and less than 500 square feet.

§3. Section BC 1504.8 of the New York city building code, as added by local law number 33 for the year 2007, is amended to read as follows:

1504.8 Reflectance. Roof coverings on roofs or setbacks with slope equal to or less than [three] two units vertical in 12 units horizontal ([25] 17 percent) shall [be white in color or EnergyStar rated as highly reflective for at least 75 percent of the area of the roof or setback surface.] have:

1. a minimum initial solar reflectance of 0.7 in accordance with ASTM C1549 or ASTM E 1918, and a minimum thermal emittance of 0.75 as determined in accordance with ASTM C1371 or ASTM E 408; or
2. a minimum SRI of 78 as determined in accordance with ASTM E 1980.

Exceptions:

1. Terraces on setbacks comprising less than 25 percent of the area of the largest floor plate in the building.
2. [Green roofs] Any portion of a roof covered by a green roof system, including such a system with

agricultural plantings, in compliance with Section 1507.16 [shall be permitted to comprise part or all of the 75 percent required area coverage].

3. [Roofs] Any portion of a roof used as outdoor recreation space by the occupants of the building [shall be permitted to be either] that is landscaped, covered by wood decking or covered with a walking surface or other protective surface, provided that such walking surface or protective surface has [with an albedo of 30 percent or greater] a minimum initial solar reflectance of 0.3 as determined in accordance with ASTM C1549 or ASTM E1918.

4. Ballasted roofs, provided that the ballast has a minimum initial solar reflectance of 0.2 as determined in accordance with ASTM C1549 or ASTM E1918.

5. Any portion of a roof that is under mechanical equipment, flush mounted solar panels lying directly on the roof surface, duckboarding, decking, platform, roof tank, cooling tower or any other rooftop structure or equipment exempted by rule by the commissioner.

6. Any roof or portion of a roof composed of glass, metal, clay or concrete tile or plastic/rubber intended to simulate clay or concrete tile, wood, or slate.

7. Any portion of a roof used by a school or daycare center as a playground for children.

8. Any roof, if the amount of rooftop space not subject to exceptions 1 through 7 is in the aggregate less than 100 square feet.

§4. Section BC 1510.1 of the New York city building code, as added by local law number 33 for the year 2007, is amended to read as follows:

1510.1 **General**. Materials and methods of application used for recovering or replacing an existing roof covering shall comply with the requirements of Chapter 15.

Exception: Section 1504.8 shall not apply if the area to be recovered or replaced is less than 50 percent of the roof area and less than 500 square feet.

§5. The list of referenced standards of ASTM (ASTM International) as set forth in chapter 35 of the

New York city building code is amended by adding, in appropriate numerical order, new standards ASTM C1371 - 04a(2010)e1, ASTM C1549 - 09, ASTM E408 - 71(2008), ASTM E1918 - 06, and ASTM E1980 - 11 to read as follows:

ASTM ASTM International 100 Barr Harbor Drive West Conshohocken, PA 19428-2959

Standard reference number	Title
C 1371 - 04a(2010)e1 C 1549 - 09 E 408 - 71 (2008) E 1918 - 06 E1980 - 11	Standard Test Method for Determination of Emittance of Materials Near Room Temperature Using Portable Emissometers Standard Test Method for Determination of Solar Reflectance Near Ambient Temperature Using a Portable Solar Reflectometer Standard Test Methods for Total Normal Emittance of Surfaces Using Inspection-Meter Techniques Standard Test Method for Measuring Solar Reflectance of Horizontal and Low-Sloped Surfaces in the Field Standard Practice for Calculating Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces

§6. This local law shall take effect on January 1, 2012.

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