

ANALYSIS

This ordinance amends Title 31 - Green Building Standards Code of the Los Angeles County Code, as follows:

- Adds supplemental green building requirements for cool roofs for the reduction of the heat island effect.

County Counsel

By

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Principal Deputy County Counsel
Property Division

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00/00/00 (Requested)

ORDINANCE NO. _____

An ordinance amending Title 31 – Green Building Standards Code of the Los Angeles County Code, relating to green building requirements and energy standards.

The Board of Supervisors of the County of Los Angeles ordains as follows:

SECTION 1. Section 202 of Title 31 is hereby amended to read as follows:

COOL ROOF. A roofing material with high thermal emittance and high solar reflectance, or low thermal emittance and exceptionally high solar reflectance as specified in Title 24, Part 6, California Administrative Code, that reduces heat gain through the roof.

COOL ROOF RATING COUNCIL (CRRC). A not for profit organization designated by the Commission as the Supervisory Entity with responsibility to rate and label the reflectance and emittance of roof products.

SECTION 2. Section 301.3.3 of Title 31 is hereby amended to read as follows:

301.3.3 Nonresidential buildings greater than or equal to 25,000 square feet.

In addition to the requirements of Section 301.3, any newly constructed nonresidential building greater than or equal to 25,000 square feet shall comply with all requirements of Section A5.601.2.4 Tier 1. Roofing material shall comply with Tier 2 requirements of Table A5.106.11.2.3.

Exceptions:

1. Compliance with Section A5.601.2.3 shall be voluntary

2. High-rise residential buildings of seven stories or greater shall comply with Table A4.106.5.1(~~34~~) in lieu of Table A5.106.11.2.~~23~~.

SECTION 3. Section 4.106.6 of Title 31 is hereby added to read as

follows:

4.106.6 Cool roof for reduction of heat island effect.

Roofing material shall comply with the following:

Exceptions:

1. Roof repair;
2. Roof replacement when the roof area being replaced is equal to or less than 50% of the total roof area; or
3. Installation of building-integrated photovoltaics (BIPV)
4. Installation of steep sloped roof (>2:12) in climate zones 6 or 16 on other than a low-rise multifamily building.
5. Additions resulting in less than 500 square feet of added roof area or less than 50% of the total roof area, whichever is greater.
6. Roof constructions that have a thermal mass over the roof membrane including areas of vegetated (green) roofs, weighing at least 25 pounds per square foot.

4.106.6.1 Solar Reflectance.

Roofing material shall have a minimum 3-year aged solar reflectance equal to or greater than the values specified in Table 4.106.6(1) and Table 4.106.6(2).

Solar reflectance values shall be based on the aged reflectance value of the roofing product or the equation in Section A4.106.5.1 if the CRRC certified aged solar reflectance is not available.

4.106.6.2 Thermal Emittance.

Roofing material shall have a Cool Roof Rating Council (CRRC) initial or aged thermal emittance equal to or greater than the values specified in Table 4.106.6(1) and Table 4.106.6(2).

4.106.6.3 Solar Reflectance Index.

Roofing materials shall have a Solar Reflectance Index (SRI) equal to or greater than the values specified in Table 4.106.6(1) and Table 4.106.6(2).

SRI values used to comply with this section shall be calculated using the Solar Reflectance Index (SRI) Calculation Worksheet (SRI-WS) developed by the California Energy Commission or in compliance with ASTM E1980-01 as specified in the 2016 California Energy Code. Solar reflectance values used in the SRI-WS shall be based on the aged reflectance value of the roofing product or the equation in Section A4.106.5 if the CRRC certified aged solar reflectance is not available. Certified thermal emittance used in the SRI-WS may be either the initial value of the aged value listed by the CRRC.

TABLE 4.106.6(1) – LOW-RISE RESIDENTIAL

ROOF SLOPE	MINIMUM 3-YEAR AGED SOLAR REFLECTANCE	THERMAL EMITTANCE	SRI
≤ 2:12	0.65	0.85	78
>2:12	0.23	0.85	20

TABLE 4.106.6(2) – HIGH RISE RESIDENTIAL BUILDINGS, HOTELS AND MOTELS

ROOF SLOPE	MINIMUM 3-YEAR AGED SOLAR REFLECTANCE	THERMAL EMITTANCE	SRI
≤ 2:12	0.65	0.75	78
>2:12	0.23	0.75	20

SECTION 4. Section 5.106.11 is hereby added to Title 31 to read as

follows:

5.106.11 Cool roof for reduction of heat island effect.

Roofing material shall comply with the following:

Exceptions:

1. Roof repair;
2. Roof replacement when the roof area being replaced is equal to or less than 50% of the total roof area; or
3. Installation of building-integrated photovoltaics (BIPV)
4. Additions resulting in less than 500 square feet of added roof area or less than 50% of the total roof area, whichever is greater.

5. Roof constructions that have a thermal mass over the roof membrane including areas of vegetated (Green) roofs, weighing at least 25 pounds per square foot.

5.106.11.1 Solar Reflectance.

Roofing material shall have a minimum 3-year aged solar reflectance equal to or greater than the values specified in Table 5.106.11.

Solar reflectance values shall be based on the aged reflectance value of the roofing product or the equation in Section A5.106.11.2.1 if the CRRC certified aged solar reflectance is not available.

5.106.11.2 Thermal Emittance.

Roofing material shall have a Cool Roof Rating Council (CRRC) initial or aged thermal emittance equal to or greater than the values specified in Table 5.106.11.

5.106.11.3 Solar Reflectance Index.

Roofing materials shall have a Solar Reflectance Index (SRI) equal to or greater than the values specified in Table 5.106.11.

SRI values used to comply with this section shall be calculated using the Solar Reflectance Index (SRI) Calculation Worksheet (SRI-WS) developed by the California Energy Commission or in compliance with ASTM E1980-01 as specified in the 2016 California Energy Code. Solar reflectance values used in the SRI-WS shall be based on the aged reflectance value of the roofing product or the equation in Section A5.106.11.2.1 if the CRRC certified aged solar reflectance is not available. Certified

thermal emittance used in the SRI-WS may be either the initial value of the aged value listed by the CRRC.

TABLE 5.106.11

ROOF SLOPE	MINIMUM 3-YEAR AGED SOLAR REFLECTANCE	THERMAL EMITTANCE	SRI
≤ 2:12	0.68	0.85	82
>2:12	0.28	0.85	27

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SECTION 5. The provisions of this ordinance contain various changes or modifications to requirements contained in the building standards published in the California Green Building Standards Code.

Pursuant to California Health and Safety Code sections 17958.5, 17958.7, and 18941.5, the Board of Supervisors hereby expressly finds that all of the changes and modifications to requirements contained in the building standards published in the California Green Building Standards Code, contained in this ordinance are reasonably necessary because of local climatic, geological, or topographical conditions in the County of Los Angeles as more particularly described in the table set forth below:

GREEN BUILDING STANDARDS CODE AMENDMENTS		
CODE SECTION	CONDITION	EXPLANATION
202	Administrative	Adds definitions pertinent to cool roof requirements.
4.106.6	Climatic	Environmental resources in the County of Los Angeles are scarce due to varying and occasionally immoderate temperature and weather conditions.

GREEN BUILDING STANDARDS CODE AMENDMENTS		
CODE SECTION	CONDITION	EXPLANATION
		Adding mandatory requirements for cool roofs for all residential occupancies will achieve a greater reduction in greenhouse gases, higher efficiencies of energy, and improved environmental air quality.
5.106.11	Climatic	Environmental resources in the County of Los Angeles are scarce due to varying and occasionally immoderate temperature and weather conditions. Adding mandatory requirements for cool roofs for all non-residential occupancies will achieve a greater reduction in greenhouse gases, higher efficiencies of energy, and improved environmental air quality.

SECTION 6. The provisions of this ordinance require compliance with energy standards that are different from and more stringent than the energy standards contained in the California Energy Code.

The Board of Supervisors hereby expressly finds that the energy standards adopted in this ordinance will require buildings to be designed to consume no more energy than permitted by the California Energy Code.

SECTION 7. This ordinance shall become operative upon the approval of the energy standards contained in the ordinance by the California Energy Commission.

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