

CITY OF BALTIMORE
ORDINANCE _____
Council Bill 21-0160

Introduced by: Councilmembers Conway, Dorsey, Porter, Bullock, Middleton, Burnett, Cohen,
Stokes, Ramos, Glover

Introduced and read first time: October 4, 2021

Assigned to: Rules and Legislative Oversight

Committee Report: Favorable, with amendments

Council action: Adopted

Read second time: May 15, 2023

AN ORDINANCE CONCERNING

1 **Building Code – Cool Roofs**

2 FOR the purpose of requiring newly constructed buildings and additions to existing buildings
3 ~~partly financed using City funds~~ to adhere to specified roofing requirements; authorizing
4 certain exceptions; and generally relating to the installation of Cool Roofs.

5 BY repealing and reordaining, with amendments

6 Article - Building, Fire, and Related Codes

7 Section(s) 2-103 (IBC § 1503 through 1509)

8 Baltimore City Revised Code

9 (2020 Edition)

10 BY adding

11 Article - Building, Fire, and Related Codes

12 Section(s) 2-103 (IBC §§ 202.2.15A and 1504.9)

13 Baltimore City Revised Code

14 (2020 Edition)

15 BY repealing and reordaining, with amendments

16 Article - Building, Fire, and Related Codes

17 Section(s) 9A-102 (IECC-C § 402.1 through 402.4)

18 Baltimore City Revised Code

19 (2020 Edition)

20 BY repealing and reordaining, with amendments

21 Article - Building, Fire, and Related Codes

22 Section(s) 11-102 (IGCC § 501.3.5.3.2)

23 Baltimore City Revised Code

24 (2020 Edition)

EXPLANATION: CAPITALS indicate matter added to existing law.
[Brackets] indicate matter deleted from existing law.
Underlining indicates matter added to the bill by amendment.
~~Strike out~~ indicates matter stricken from the bill by
amendment or deleted from existing law by amendment.

Council Bill 21-0160

1 BY repealing and reordaining, with amendments
2 Article - Building, Fire, and Related Codes
3 Section(s) 10-102 (IRC § 901 through 908)
4 Baltimore City Revised Code
5 (2020 Edition)

6 BY adding
7 Article - Building, Fire, and Related Codes
8 Section(s) 10-102 (IRC §§ 202.2.1A and 905.18)
9 Baltimore City Revised Code
10 (2020 Edition)

11 BY repealing and reordaining, with amendments
12 Article 1 - Mayor, City Council, and Municipal Agencies
13 Section 40-14(e)(5c)
14 Baltimore City Code
15 (Edition 2000)

16 BY adding
17 Article 1 - Mayor, City Council, and Municipal Agencies
18 Section 40-14(e)(6b)
19 Baltimore City Code
20 (Edition 2000)

21 **SECTION 1. BE IT ORDAINED BY THE MAYOR AND CITY COUNCIL OF BALTIMORE,** That the
22 Laws of Baltimore City read as follows:

23 **Baltimore City Revised Code**

24 **Article – Building, Fire, and Related Codes**

25 **Part II. International Building Code**

26 **§ 2-103 City modifications.**

27 The additions, deletions, amendments, and other modifications adopted by the City are as
28 follows:

29 **Chapter 2. Definitions; Rules of Construction**

30 **Section 202 Definitions**

31 ...

32 **202.2 Supplemental definitions.** Notwithstanding any different definition in the
33 International Building Code, the following terms have the meanings given in this § 202.2.

34 ...

Council Bill 21-0160

202.2.15 Code. “Code” means, unless otherwise specified in the Building, Fire, and Related Codes of Baltimore City, as further defined in § 101.1 {“Title”}.

202.2.15A COOL ROOF RATING COUNCIL. “COOL ROOF RATING COUNCIL” OR “CRRC” MEANS THE COOL ROOF RATING COUNCIL, INC., AN AMERICAN NATIONAL STANDARDS INSTITUTE-ACCREDITED STANDARDS DEVELOPER ORGANIZATION, THAT CREATED, MAINTAINS, AND UPDATES THE AMERICAN NATIONAL STANDARD: ANSI/CRRC S100 - “STANDARD TEST METHODS FOR DETERMINING RADIATIVE PROPERTIES OF MATERIALS”.

Chapter 15 . Roof Assemblies and Rooftop Structures

SECTION 1503 {As in IBC} [SECTIONS 1503 TO 1509 {As in IBC}]

SECTION 1504 PERFORMANCE REQUIREMENTS

1504.9 REFLECTANCE. ROOF COVERINGS OVER CONDITIONED SPACES ON LOW-SLOPE ROOFS (ROOF SLOPE < 2:12) ON NEWLY CONSTRUCTED BUILDINGS AND ADDITIONS TO EXISTING BUILDINGS SHALL ~~BE ENERGY STAR RATED AS HIGHLY REFLECTIVE~~ HAVE A MINIMUM 3-YEAR-AGED SOLAR REFLECTIVE INDEX OF 78, AS DETERMINED BY THE COOL ROOF RATING COUNCIL.

EXCEPTIONS:

1. AN ADDITION TO A ROOF THAT SUPPORTS LIVING VEGETATION AND INCLUDES A SYNTHETIC, HIGH QUALITY WATERPROOF MEMBRANE, DRAINAGE LAYER, SOIL LAYER, AND LIGHTWEIGHT MEDIUM PLANTS.
2. ROOF AREAS USED AS OUTDOOR RECREATION SPACE BY THE OCCUPANTS OF THE BUILDING.
3. AN AREA INCLUDING AND ADJACENT TO ROOFTOP PHOTOVOLTAIC AND SOLAR THERMAL EQUIPMENT, TOTALING NOT MORE THAN 3 TIMES THE AREA THAT IS COVERED WITH PHOTOVOLTAIC AND SOLAR THERMAL EQUIPMENT.
4. LIMITED ROOF AREAS AS DETERMINED BY REGULATIONS PROMULGATED BY THE DEPARTMENT OF HOUSING & COMMUNITY DEVELOPMENT.
5. A ROOF, THE AREA OF WHICH IS LESS THAN 3% OF THE GROSS FLOOR AREA OF THE BUILDING.

1504.9.1 CONFLICTS. IN THE EVENT OF A CONFLICT BETWEEN § 1504.9 OF THIS CODE AND CITY CODE ARTICLE 6 {“HISTORICAL AND ARCHITECTURAL PRESERVATION”}, CITY CODE ARTICLE 6 {“HISTORICAL AND ARCHITECTURAL PRESERVATION”} PREVAILS.

SECTIONS 1505 TO 1509 {As in IBC}

Council Bill 21-0160

Baltimore City Revised Code

Article – Building, Fire, and Related Codes

Part IX-A. International Energy Conservation Code – Commercial Provisions

§ 9A-102. City Modifications.

The additions, deletions, amendments, and other modifications adopted by the City are as follows:

Chapter 4 Commercial Energy Efficiency

Section 402 Building Envelope Requirements

402.1 TO [402.4] 402.2 {As in IECC-C}

402.3 ROOF SOLAR REFLECTANCE AND THERMAL EMITTANCE. LOW-SLOPED ROOFS DIRECTLY ABOVE COOLED CONDITIONED SPACES IN CLIMATE ZONES 1, 2 AND 3 SHALL HAVE A MINIMUM 3-YEAR-AGED SOLAR REFLECTIVE INDEX OF 78, AS DETERMINED BY THE COOL ROOF RATING COUNCIL.

EXCEPTIONS: THE FOLLOWING ROOFS AND PORTIONS OF ROOFS ARE EXEMPT FROM THE REQUIREMENTS OF THIS SUBSECTION:

1. PORTIONS OF THE ROOF THAT INCLUDE OR ARE COVERED BY THE FOLLOWING:

1.1. PHOTOVOLTAIC SYSTEMS OR COMPONENTS.

1.2. SOLAR AIR OR WATER-HEATING SYSTEMS OR COMPONENTS.

1.3. ROOF GARDENS OR LANDSCAPED ROOFS.

1.4. ABOVE-ROOF DECKS OR WALKWAYS.

1.5. SKYLIGHTS.

1.6. HVAC SYSTEMS AND COMPONENTS, AND OTHER OPAQUE OBJECTS MOUNTED ABOVE THE ROOF.

2. PORTIONS OF THE ROOF SHADED DURING THE PEAK SUN ANGLE ON THE SUMMER SOLSTICE BY PERMANENT FEATURES OF THE BUILDING OR BY PERMANENT FEATURES OF ADJACENT BUILDINGS.

3. PORTIONS OF ROOFS THAT ARE BALLASTED WITH A MINIMUM STONE BALLAST OF 17 PSF (74 KG/M²) OR 23 PSF (117 KG/M²) PAVERS.

4. ROOFS WHERE NOT LESS THAN 75 PERCENT OF THE ROOF AREA COMPLIES WITH ONE OR MORE OF THE EXCEPTIONS TO THIS SECTION.

Council Bill 21-0160

402.3.1 AGED ROOF SOLAR REFLECTANCE. WHERE AN AGED SOLAR REFLECTANCE REQUIRED BY SECTION 402.3 IS NOT AVAILABLE, IT SHALL BE DETERMINED IN ACCORDANCE WITH EQUATION 4-3.

$$R_{AGED} = [0.2 + 0.7(R_{INITIAL} - 0.2)]$$
 (EQUATION 4-3)

WHERE:

R_{AGED} = THE AGED SOLAR REFLECTANCE.

$R_{INITIAL}$ = THE INITIAL SOLAR REFLECTANCE DETERMINED IN ACCORDANCE WITH CRRC-S100.

402.4 {AS IN IECC-C}

Part XI. International Green Construction Code

§ 11-102. City Modifications.

The additions, deletions, amendments, and other modifications adopted by the City are as follows:

Chapter 5 Site Sustainability

Section 501.3 Mandatory Provisions

501.3.5 Mitigation of Heat Island Effect.

501.3.5.3 Roofs.

...

501.3.5.3.2 Required Coverage. A minimum of 75% of the roof surface must be covered with products that:

- a. have a minimum [three] 3-year-aged SRI of [64] 78 in accordance with § 501.3.5.4 for roofs with a slope of less than or equal to 2:12; AND
- b. have a minimum 3-year-aged SRI of 25 in accordance with § 501.3.5.4 for roofs with a slope of more than 2:12.

Council Bill 21-0160

Baltimore City Revised Code

Article – Building, Fire, and Related Codes

Part X. International Residential Code

§ 10-102 City modifications.

The additions, deletions, amendments, and other modifications adopted by the City are as follows:

Part II - Definitions

Chapter 2. Definitions

Section 202 Definitions

202.2 Supplemental definitions. Notwithstanding any different definition in the International Residential Code, the following terms have the meanings given in this § 202.2.

...

202.2.1A COOL ROOF RATING COUNCIL. “COOL ROOF RATING COUNCIL” OR “CRRC” MEANS THE COOL ROOF RATING COUNCIL, INC., AN AMERICAN NATIONAL STANDARDS INSTITUTE-ACCREDITED STANDARDS DEVELOPER ORGANIZATION, THAT CREATED, MAINTAINS, AND UPDATES THE AMERICAN NATIONAL STANDARD: ANSI/CRRC S100 - “STANDARD TEST METHODS FOR DETERMINING RADIATIVE PROPERTIES OF MATERIALS”.

Part III – Building Planning and Construction

Chapter 9 . Roof Assemblies

SECTIONS 901 TO 904 {AS IN IBC} [SECTIONS 901 TO 908 {As in IRC}]

SECTION 905 REQUIREMENTS FOR ROOF COVERINGS

905.1 TO 905.17 {AS IN IRC}

905.18 REFLECTANCE. ROOF COVERINGS OVER CONDITIONED SPACES ON LOW-SLOPE ROOFS (ROOF SLOPE < 2:12) ON NEWLY CONSTRUCTED BUILDINGS AND ADDITIONS TO EXISTING BUILDINGS SHALL ~~BE ENERGY STAR RATED AS HIGHLY REFLECTIVE~~ HAVE A MINIMUM 3-YEAR-AGED SOLAR REFLECTIVE INDEX OF 78, AS DETERMINED BY THE COOL ROOF RATING COUNCIL.

Council Bill 21-0160

EXCEPTIONS:

- 1. AN ADDITION TO A ROOF THAT SUPPORTS LIVING VEGETATION AND INCLUDES A SYNTHETIC, HIGH QUALITY WATERPROOF MEMBRANE, DRAINAGE LAYER, SOIL LAYER, AND LIGHTWEIGHT MEDIUM PLANTS.
- 2. ROOF AREAS USED AS OUTDOOR RECREATION SPACE BY THE OCCUPANTS OF THE BUILDING.
- 3. AN AREA INCLUDING AND ADJACENT TO ROOFTOP PHOTOVOLTAIC AND SOLAR THERMAL EQUIPMENT, TOTALING NOT MORE THAN 3 TIMES THE AREA THAT IS COVERED WITH PHOTOVOLTAIC AND SOLAR THERMAL EQUIPMENT.
- 4. LIMITED ROOF AREAS AS DETERMINED BY REGULATIONS PROMULGATED BY THE DEPARTMENT OF HOUSING & COMMUNITY DEVELOPMENT.
- 5. A ROOF, THE AREA OF WHICH IS LESS THAN 3% OF THE GROSS FLOOR AREA OF THE BUILDING.

905.18.1 CONFLICTS. IN THE EVENT OF A CONFLICT BETWEEN § 905.18 OF THIS CODE AND CITY CODE ARTICLE 6 {"HISTORICAL AND ARCHITECTURAL PRESERVATION"}, CITY CODE ARTICLE 6 {"HISTORICAL AND ARCHITECTURAL PRESERVATION"} PREVAILS.

SECTIONS 906 TO 908 {AS IN IRC}

Baltimore City Code

Article 1. Mayor, City Council, and Municipal Agencies

Subtitle 40. Environmental Control Board

§ 40-14. Violations to which this subtitle applies.

...

(e) Provisions and penalties enumerated.

...

(5c) Building, Fire and Related Codes Article – Building Code

...

§ 1209.4 Diaper-Changing Amenities \$500

§ 1504.9 PERFORMANCE REQUIREMENTS \$1,000

...

Council Bill 21-0160

1
2
3
4
5

**(6B) BUILDING, FIRE AND RELATED CODES ARTICLE –
INTERNATIONAL RESIDENTIAL CODE**

§ 905.18 REFLECTANCE \$1,000

SECTION 2. AND BE IT FURTHER ORDAINED, That this Ordinance takes effect on the 30th day after the date it is enacted.

Council Bill 21-0160

Certified as duly passed this 12 day of June, 2023



President, Baltimore City Council

Certified as duly delivered to His Honor, the Mayor,

this 12 day of June, 2023



Chief Clerk

Approved this _____ day of _____, 20____

Mayor, Baltimore City