



MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive. 101 Monroe Street. Rockville, Maryland 20850

Subject: International Green Construction Code (IGCC) 2018	Number: 12-20
Originating Department: Department of Permitting Services	Effective Date: September 28, 2021

Montgomery County Regulation on:

COMCOR 08.00.03 ADOPTION OF THE 2018 INTERNATIONAL GREEN CONSTRUCTION CODE

DEPARTMENT OF PERMITTING SERVICES

Issued by: County Executive
Regulation No. 12-20

Authority: Code Sections 8-13 and 8-14
Supersedes: Executive Regulation 21-15AMII
Council Review: Method 2
Register Vol. 37 Issue 8
Comment deadline: October 5, 2020
Effective date: September 28, 2021
Sunset date: None

SUMMARY: This regulation adopts the 2018 International Green Construction Code (IGCC), with amendments, and supersedes Executive Regulation 21-15AMII.

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BACKGROUND INFORMATION: The Montgomery County Department of Permitting Services (DPS) enforces Chapter 8 (Buildings) of the Montgomery County Code. This regulation is adopted under Sections 8-13 and 8-14 of the Montgomery County Code. It supersedes Executive Regulation 21-15AMII by replacing the 2012 International Green Construction Code (IgCC), with amendments, with the 2018 IgCC, with amendments. This regulation is recommended by DPS after a coordinated effort spearheaded by the County Executive’s Assistant Chief Administrative Officer and Climate Change Coordinator, which was supported by the Montgomery County Departments of Environmental Protection and Transportation, the Montgomery County Public Schools, the Washington Suburban Sanitation Commission (WSSC), Montgomery County Planning Department of the Maryland-National Capital Park and Planning Commission, and public stakeholders, who are all committed to achieve net-zero carbon emissions by the year 2030 in Montgomery County.

COMCOR 08.00.03 Buildings – Energy Conservation and Sustainable Building Design.

08.00.03.01 PURPOSE

This regulation adopts the 2018 International Green Construction Code (IGCC), with amendments, and establishes:

- (a) a process to verify that certain new construction and additions comply with the applicable standard;
- (b) standards and procedures under which the Director may approve waivers or modifications of the IGCC, when compliance would be impracticable or unduly burdensome and the public interest would be served by the waiver or modification; and
- (c) standards and procedures for any enforcement mechanism that the Department finds necessary to accomplish the purposes of the energy conservation and sustainable building design standard adopted in this regulation.

**AMENDMENTS TO THE 2018 INTERNATIONAL GREEN
CONSTRUCTION CODE (IgCC)**

08.00.03.02 Section 101.1. Delete the brackets and replace the phrase within the brackets with “Montgomery County, Maryland”.

08.00.03.03 Section 101.3.1. Delete items (1) through (4) and replace with the following:
1. New buildings greater than 5,000 square feet in gross aggregate area and their systems.



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2. New portions of buildings exceeding 5,000 square feet in gross aggregate square area and their systems.

08.00.03.04 Section 101.3.2. Add the following item:

6. Group R-4 occupancy buildings not exceeding 16 residents.

08.00.03.05 Section 102.6. Existing Structures. Delete.

08.00.03.06 Section 108. Board of Appeals. Delete.

08.00.03.07 Section 301.2. Definitions.

Add the following definition:

Gross Aggregate Area means the sum of the floor areas of all the spaces within the building with no deductions for floor penetrations. *Gross Aggregate Area* is measured from the exterior faces of exterior walls or from the centerline of walls separating buildings. *Gross Aggregate Area* includes covered walkways, open roofed-over areas, porches and similar spaces, exterior terraces or steps, roof overhangs, parking garages, surface parking, and similar features.

Amend the definition of *Owner's Project Requirements (OPR)* to add the following sentence at the end: "All information in the *OPR* document shall certify that the items identified in the plans are constructed, installed and operate as intended in the approved plans and specifications."

08.00.03.08 Subsection 501.3.1.2. Prohibited Development Activity. Delete.

08.00.03.09 Sections 501.3.2, 501.3.3, 501.3.4, 501.3.6, 501.3.7, and 501.3.8. Delete.

08.00.03.10 Section 601.3. Delete.

08.00.03.11 Section 701.4.1.1.1. Add the following sentence at the end: "All RECs obtained must be sourced within the PJM Interconnection region. Documentation pertaining to retainment and retirement of RECs must be available to the authority having jurisdiction, for review upon request." Note: PJM Interconnection is a regional transmission organization that coordinates the movement of wholesale electricity in all or parts of 13 states including Maryland and DC.

08.00.03.12 Section 701.5.1. Delete in full and replace with the following language: **Performance-based compliance.** Compliance for buildings and their sites to be designed on a performance basis must be determined by predictive modeling of both energy performance and CO₂e emissions. Predictive energy



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modeling must use source energy kBtu unit measure based on compliance with Section 701.5.1.1. Predictive CO_{2e} emissions modeling must comply with Section 701.5.2.

Subsection 701.5.1.1 Energy performance modeling. Performance-based designs must demonstrate a zEPI of not more than the zEPI_{target} for the building type as shown in Table 701.5.1. zEPI must be determined under the following:

Equation:

$$(Equation) \text{ zEPI} = M \times (\text{Proposed building performance} / \text{Baseline building performance})$$

Where:

zEPI = zero energy performance index of the proposed building

zEPI_{target} = zero energy performance index target for compliance with this section

Proposed Building Performance (PBF) = The proposed building performance in source kBtu for the proposed design of the building and its site calculated under Section 701.5.1.2

Baseline Building Performance (BBF) = The baseline building performance in source kBtu for a baseline building and its site calculated under Section 701.5.1.2

M = zEPI conversion factors from a 90.1 Appendix G baseline to a CBECS 2003 baseline for the building type as shown in Table 701.5.1.

Table 701.5.1

Building Type zEPI score calculation inputs

BUILDING TYPE	M	zEPI _{target}
Multifamily	78	42
Health	83	45
Hotel/motel	92	50
Office	71	39
Restaurant	92	50
Retail	61	33
School	81	44
Semi-heated storage	61	37
Other	78	42



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Subsection 701.5.1.2 Modeling methodology. The proposed building performance and the baseline building performance of the building and building site must be calculated under Appendix G to ASHRAE 90.1, as modified by Sections 701.5.1.3 and 701.5.1.4. The energy use modeling must include all energy used for building and site functions and anticipated occupancy.

Subsection 701.5.1.3 Energy units. The building performance calculations in Section G3 of ASHRAE 90.1 must be based on energy use instead of energy cost. Energy use must be converted to consistent units by multiplying the nonrenewable energy fossil fuel use at the utility meter or measured point of delivery to Btus and multiplying by the conversion factor in Table 701.5.1.3.

Subsection 701.5.1.4 Site to source electric power conversion. In calculating the proposed building performance and the baseline building performance, electric energy used must be calculated in source energy by multiplying the electric power use at the utility meter or measured point of delivery in Btus by the conversion factor in Tables 701.5.1.3 and 701.5.1.4.

TABLE 701.5.1.3
ELECTRICITY GENERATION ENERGY CONVERSION FACTORS
BY EPA eGRID SUB-REGION

eGRID 2018 SUB- REGION ACRONYM	eGRID 2018 SUB- REGION NAME	ENERGY CONVER SION FACTOR
RFCE	RFC East	2.86

TABLE 701.5.1.4
U.S. AVERAGE BUILDING FUELS ENERGY CONVERSION
FACTORS BY FUEL TYPE

FUEL TYPE	ENERGY CONVERSION FACTOR
Natural Gas	1.09
Fuel Oil	1.19
LPG	1.15
Purchased District Heating- Hot Water	1.73



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Purchased District Heating- Steam	1.83
District Cooling	.62 (electric only)

08.00.03.13 Section 701.5.2. Delete Tables 701.5.2A and 701.5.2B and replace with:

**TABLE 701.5.2A (7.5.2A) ENERGY COST AND CO_{2e}
BUILDING PERFORMANCE FACTORS (BPF)**

BUILDING TYPE	BUILDING PERFORMANCE FACTOR (BPF)
Multifamily	0.66
Healthcare/hospital	0.51
Hotel/motel	0.48
Office	0.47
Restaurant	0.61
Retail	0.48
School	0.36
Semiheated warehouse	0.42
all others	0.5

TABLE 701.5.2B (7.5.2B) CO_{2e} EMISSION FACTORS

Energy Form	CO _{2e} , lb/kBtu	CO _{2e} , kg/MWh
Grid-delivered electricity and other fuels not specified in this table	1156	524
LP or propane	651	295



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Fuel oil (residual)	738	335
Fuel oil (distillate)	715	324
Coal	892	405
Gasoline	744	337
Natural gas	681	309
District chilled water	339	154
District steam	1145	519
District hot water	1081	491

08.00.03.14 Sections 801.3.1.7 and 801.3.3.5. Delete.

08.00.03.15 Section 901.3.1. Delete.

08.00.03.16 Sections 1001.3.1.1.2.c and 1001.3.1.1.1.3. Amend to add the phrase “AHJ, with copies also being provided to” before the phrase “building owner” and “owner”, respectively.

08.00.03.17 Sections 1001.3.1.1.2.1.3, 1001.3.1.4, 1001.3.1.7, 1001.3.1.9, 1001.3.1.10, 1001.3.2.1.2, 1001.3.2.1.5 and 1001.3.2.4. Delete.

08.00.03.18 Section 1001.3.2.1.3. Delete the second sentence and subsections 1001.3.2.1.3.1 through 1001.3.2.1.3.3 and replace with the following: “The plan must describe the procedures needed to use the energy measurement devices and collection/storage infrastructure, and the procedures for tracking and assessing energy consumption.

08.00.03.19 Section 1001.3.2.1.4. Delete in its entirety and replace it with the following: “The indoor air quality plan must describe the procedures needed to implement a regular outdoor airflow monitoring program after building occupancy; the procedures for operating ventilation systems during occupancy; the procedures needed for maintaining and monitoring IAQ after building occupancy; a green cleaning plan; and the procedures for implementing a regular humidity sensor monitoring program after building occupancy.

08.00.03.20 Amend Normative Reference Chapter 11, ISO, to replace "ISO 21930-2007:" with "ISO 21930-2017:".

08.00.03.21 Informative Appendix H is adopted in its entirety.



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08.00.03.22 Section J101.1.3. Add the phrase “this code or” after the phrase “shall comply with”.

08.00.03.23 Informative Appendix J. Sections J101.1.3, J101.1.4, and J101.1.5 are adopted.

08.00.03.24 SEVERABILITY

The provisions of this regulation are severable. If a court of competent jurisdiction holds that a provision is invalid or inapplicable, the remainder of the regulation remains in effect.

Handwritten signature of Marc Elrich in cursive.

3/22/2021

Marc Elrich, County Executive

Date

Approved as to form and legality:

Handwritten signature of Charles L. Frederick in cursive.

Charles L. Frederick

Office of the County Attorney

12 February 2021
Date