



**GOVERNMENT OF THE DISTRICT OF COLUMBIA
CONSTRUCTION CODES COORDINATING BOARD**
c/o DCRA– 1100 4th Street SW, Washington, DC 20024

CODE CHANGE PROPOSAL FORM

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CODE: IgCC **SECTION NO.** 605 **SUBCOMMITTEE AMENDMENT NO.** GC-G-6-17-13

PROPOSING SUBCOMMITTEE: Green

CHAIR: Updike **PHONE:** 202-535-1337 **E-mail:** William.updike@gc.gov

DATES OF PROPOSAL: 5/31/12 **CCCB PRESENTATION:** 7.3.12 **CCCB APPROVAL:** 7/26/12

CHECK ONE *Revise section to read as follows:* X *Delete section and substitute the following:*
 Add new section to read as follows: *Delete section without substitution.*

TYPE ALL TEXT IN 12-POINT TIMES NEW ROMAN FONT
~~**LINE THROUGH TEXT TO BE DELETED**~~-(highlight text, under Format, click font and check strikethrough)
UNDERLINE TEXT TO BE ADDED
 Use additional sheets of the form, if necessary.

See attached page. This proposal assumes that the adoption of the 2012 IECC will include the adoption of Tables C402.1.2 and C402.3 without amendments.

Anticipated impact of code change on cost of construction (CHECK ONE)

Increase *Decrease* *Negligible* *Unknown*

Per 1,000 SF single-family dwelling NA to NA

Per 1,000SF of commercial building to see below

JUSTIFICATION OF CHANGE:
 Please reference one or more of the criteria required

To address a critical life/safety, health, general welfare need.

To address a specific District of Columbia policy or statute

For consistency with federal, or with reference to the Metro DC area (MD, VA) codes

Address a unique character issue in the District of Columbia

Correction of errors and omissions

Other (explain)



This proposal is intended to allow adoption of the 2012 IgCC as directed by the Mayor while reducing the stringency of the thermal envelope requirements to those consistent with the 2012 IECC (unamended). Additionally the air leakage testing requirements have been modified to align with the requirements of the DC Green Building Act to limit mandatory air leakage test to structures with a building area greater than 50,000 square feet. The Green TAG members generally agreed that consideration should be given to the air leakage allowance proposed (0.40 cfm/ft²) to be reduced to the current IgCC level of 0.25 cfm/ft² in the next code cycle.

It is estimated that the addition of air leakage testing requirement may add \$100 to \$200 per 1,000 square foot of building area for buildings over 50,000 square feet with the price per 1,000 ft² generally decreasing below the price listed as building areas increase.

SECTION 605 BUILDING ENVELOPE SYSTEMS

Delete Section 605 of the International Green Construction Code in its entirety and substitute new Section 605 in the Green Construction Code to read as follows.

605.1 Prescriptive compliance. Where buildings are designed using the prescriptive-based compliance path in accordance with Section 601.3.2, *building thermal envelope* systems shall comply with the provisions of Section C402 of the *International Energy Conservation Code* and the provisions of this section.

605.1.1 Insulation and fenestration criteria. ~~The *building thermal envelope* shall exceed meet the requirements of Tables C402.1.2 and C402.3 of the *International Energy Conservation Code* by not less than 10 percent. Specifically, for purposes of compliance with this code, each Ufactor, C factor, F factor and SHGC in the specified tables shall be reduced by 10 percent to determine the prescriptive criteria for this code. In Sky Type "c" locations specified in Section 808.4, the skylights shall not exceed 5 percent of the building roof area.~~

605.1.1.1 Permanent shading devices for fenestration. ~~Vertical fenestration within 45 degrees (785 rad) of the nearest west, south, and east cardinal ordinate shall be shaded by permanent horizontal exterior projections with a projection factor greater than or equal to 0.25. Where different windows or glass doors have different projection factor values, each shall be evaluated separately, or an area-weighted projection factor value shall be calculated and used for all windows and glass doors. Horizontal projections shall extend laterally beyond the edge of the~~



glazing not less than one-half of the height of the glazing, except at building corners.

Exception: Shading devices are not required for the following buildings and fenestrations:

1. Buildings located in hurricane-prone regions in accordance with Section 1609.2 of the *International Building Code (IBC)* or on any other building with a mean roof height exceeding the height limits specified in Table 1504.8 of the *International Building Code* based on the exposure category and basic wind speed at the building site.
2. Where fenestration is located in a building wall that is within 18 inches (457mm) of the lot line.
3. Where equivalent shading of the fenestration is provided by buildings, structures, geological formations, or permanent exterior projections that are not horizontal, as determined by sun-angle studies at the peak solar altitude on the spring equinox, and three hours before and after the peak solar altitude on the spring equinox.
4. Where fenestration contains dynamic glazing that has a lower labeled solar heat gain coefficient (SHGC) equal to or less than 0.12, and the ratio of the higher and lower labeled visible transmittance (VT) is greater than or equal to 5. Dynamic glazing shall be automatically controlled to modulate, in multiple steps, the amount of solar gain and light transmitted into the space in response to daylight levels or solar intensity. Functional testing of controls shall be conducted in accordance with Section C408.3.1 of the *International Energy Conservation Code*.

605.1.2 Air leakage. The *building thermal envelope* shall be durably sealed to limit air leakage in accordance with Section C402.4 of the *International Energy Conservation Code* and the provisions of this section.

605.1.2.1 Air barriers. A continuous air barrier shall be provided for buildings in climate zones 1 through 8 in accordance with Section C402.4.1 of the *International Energy Conservation Code*. The exception in Section C402.4.1 of the *International Energy Conservation Code* shall not apply.

605.1.2.2 Testing requirement. The *building thermal envelope* air tightness shall be considered to be acceptable where the tested air leakage of the total area of the *building thermal envelope* is less than 0.25 0.40 cfm/ft² under a pressure differential of 0.3 in water column (1.57 lb/ft²) (1.25 L/s*m² under a pressure differential of 75 Pa). Testing shall occur after rough-in and after installation of penetrations of the building envelope, including penetrations for utilities, heating, ventilating and air conditioning (HVAC) systems, plumbing, and electrical



equipment and appliances. Testing shall be done in accordance with ASTM E 779.

Exception:

1. ~~Buildings with a *building area* less than 50,000 square feet.~~
2. ~~Buildings with a *conditioned floor area* less than 50,000 square feet.~~

605.1.2.3 Air curtains. Where a building entrance is required to be protected with a vestibule in accordance with the *International Energy Conservation Code*, an air curtain tested in accordance with ANSI/AMCA 220 is permitted to be used as an alternative to separate conditioned space from the exterior.

605.2. Roof replacement. Above-deck insulation for roof replacement on an existing building with insulation entirely above the deck and where the roof slope is less than two units vertical in 12 units horizontal (17-percent slope) shall be in accordance with Section 1003.2.7.