

| CITY & COUNTY OF DENVER<br>COMMUNITY PLANNING & DEVELOPMENT<br>BUILDING PERMIT POLICY                                                         |                                      |                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------------------------|
| <b>Subject: RESCHECK/COMCHECK INTERIM SUBMITTAL REQUIREMENTS</b><br><b>Prescriptive Compliance Paths – 2018 IECC &amp; ASHRAE 90.1 - 2016</b> |                                      |                            |
| <b>Approved: Scott V. Prisco, AIA, Building Official</b>                                                                                      |                                      | <b>Drafted by: Pafford</b> |
| <b>Number: IECC C401.2 &amp; R401.2</b>                                                                                                       | <b>Effective Date: June 25, 2020</b> | <b>Page: 1 of 5</b>        |

**Reference: 2018 International Energy Conservation Code (IECC)  
2018 International Residential Code (IRC) Chapter 11  
2019 Denver Building Code Amendments (DBCA) to the 2018 IECC and 2018 IRC**

**For use of this policy, any reference to 2018 IECC or 2018 IRC Chapter 11, will also include any City and County of Denver Amendments to those codes.**

**Scope:** This policy clarifies the Residential and Commercial project submittal requirements for the Prescriptive Compliance Paths allowed by the 2018 IECC or 2018 IRC Chapter 11 where utilizing the US Dept. of Energy REScheck or COMcheck programs to demonstrate compliance and until a time when these programs are updated to incorporate the provisions of the 2019 Denver Building Code Amendments (DBCA).

**Definitions:**

Residential Buildings: Detached one- and two-family dwellings, multiple single-family dwellings (townhouses) and Group R-3 and R-4 buildings three stories or less in height above grade plane.

Commercial Buildings: All buildings that are not included in the definition of Residential building. Additionally, the 2019 DBCA has now reclassified all R-2 Residential buildings to Commercial buildings and subject to the commercial provisions of the code.

For further clarity, specific definitions of R-2, R-3 and R-4 can be found in the 2018 IBC Chapter 3.

**Policy:**

The 2019 DBCA has amended the 2018 IECC, 2018 IRC Chapter 11, and ASHRAE 90.1-2016 compliance paths. Until the REScheck and COMcheck programs are updated, the following requirements for Residential and Commercial plans submittals are provided.

**Residential Prescriptive Path Requirements**

Residential buildings may demonstrate compliance with the Prescriptive Path requirements by using the 2018 IECC or 2018 IRC Chapter 11 as applicable. In addition to the requirements of the 2018 IECC, 2018 IRC Chapter 11, and the 2019 DBCA, project designs where the national 2018 REScheck program is used to demonstrate compliance shall meet the following requirements for the Prescriptive Path, described below:

1. Submit the REScheck compliance certificate report with the plan’s submittal.
2. Residential plans submittals shall include ONE Additional Efficiency Package Option per DBC R407.1 / DBC N1112.1. Provide a narrative on the drawings indicating the intended Additional Efficiency Package Option. Provide drawings and documents which graphically indicate, label, and/or specify building assemblies and equipment in compliance with the Additional Efficiency Package Option selected.

**Commercial Prescriptive Path Requirements**

Commercial buildings can demonstrate compliance with the Prescriptive Path requirements by using either the 2018 IECC or ASHRAE 90.1-2016.

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In addition to the requirements of the 2018 IECC and the 2019 DBCA, project designs where the COMcheck program is used to demonstrate compliance shall meet the following requirements for each Prescriptive Path. Only the base code requirements that were amended and directly affect the COMcheck compliance results are described below.

**2018 IECC Prescriptive Path**

1. General Requirements

Follow the guidelines within the national 2018 COMcheck program using 2018 IECC and include the Envelope, Mechanical, and Lighting compliance certificates with the submittal plans for review where applicable.

2. Additional Efficiency Package Options

The national 2018 COMcheck program will not allow the user to choose more than one Additional Efficiency Package Option. The 2019 DBCA requires that TWO Additional Efficiency Package Options are required to demonstrate compliance with the 2018 IECC. One Option shall be chosen from within the national 2018 COMcheck list of Additional Efficiency Package Options. The second Additional Efficiency Package Option shall be chosen and clearly identified on the plans. Provide drawings, calculations, and documents which graphically indicate, label, and/or specify building assemblies, equipment, luminaires, and enhanced lighting controls in compliance with the selected Additional Efficiency Package Options.

- a. Below are the DBCA conditions for when Additional Efficiency Package Options are required.
  - i. For all new construction, regardless of the building size, TWO Additional Efficiency Package Options are required.
  - ii. For new first-use tenant spaces where the area of work is 10,000 square feet or more, ONE Additional Efficiency Package Option is required per DBCA C406.1.1. Section C406.1.1 will be included in the 2020 errata to indicate that two Additional Efficiency Package Options will be required rather than one to match the amended language of DBCA 406.1.
  - iii. Per DBCA C406.1.1, tenant spaces located in buildings where the entire building meets the on-site renewable energy requirements of IECC C406.5, the tenant spaces can use that on-site renewable energy system as one of the two required Additional Efficiency Package Options.
- b. Below are the DBCA conditions for when Additional Efficiency Package Options are not required, included for clarity.
  - i. For new tenant spaces where the area of work is less than 10,000 square feet per DBCA Section C406.1.1, no Additional Efficiency Package Options are required.
  - ii. For additions, no Additional Efficiency Package Options are required. Section C502.1 will be included in the 2020 errata to indicate that tenant spaces where the area of work is 10,000 square feet or more shall comply with TWO Additional Efficiency Package Options, only options that apply to systems being altered or new for the addition can be utilized.
  - iii. For existing tenant spaces, IECC C406.1.1 Exception, no Additional Efficiency Package

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Options are required. IECC C406.1.1 and C505 will be included in the 2020 errata for existing tenant spaces, indicating that TWO Additional Efficiency Package Options will be required when the following conditions are met:

- The area of work is 10,000 square feet or more; and
- Undergoing a change of occupancy or use; and
- There is an increase in demand for either fossil fuel or electrical energy.

Only those Additional Efficiency Package Options that apply to assemblies and/or systems being altered or are new for the alteration can be utilized.

3. Envelope Compliance

- a. Where using continuous z-girts, the U- factor of the assembly shall be determined from IECC C402.1.4.1 and Equation 4-1, where the ER value is determined by DBC C402.1.4.2. Calculations shall be provided with the submittal plans for review.
- b. For vertical fenestration other than curtain walls, storefront, site-built fenestration Type AW Products and entrance doors, DBC Table C402.4 requires a smaller (more restrictive) maximum U-factor than the IEBC. Therefore, COMcheck can only be used for envelope compliance where all vertical fenestration consists of curtain walls, storefront and/or site-built fenestration Type AW Products. Where other vertical fenestration is proposed, calculations showing compliance with the component performance alternative method in IECC C402.1.5 must be submitted in lieu of COMcheck. Alternatively, envelope can comply with the component R-value-based method of IECC C402.1.3 or the U-factor, C-factor or F-factor-based method of IECC C402.1.4.

4. Mechanical Compliance

- a. Low capacity ventilation fans shall comply with the requirements of DBCA C403.8.6. Provide schedules with notes indicating that the equipment efficiencies comply.
- b. High input service water heating systems shall comply with the requirements of DBCA C404.2.1. Provide schedules with notes indicating that the equipment efficiencies comply.

5. Lighting Compliance

- a. If one of the two chosen Additional Efficiency Package Options is Section C406.3 *Reduced Lighting Power*, then a calculation shall be provided indicating that the total connected interior lighting power calculated per DBC C405.3.1 is less than 70% (more than 30% better than code) of the total lighting power allowance per IECC C405.3.2.
- b. If the Total Interior Lighting Power Allowance is determined using the Building Area Method according to IECC Table C405.3.2(1), both the area of dwelling units and the wattage of lighting in the dwelling units must be included for Multifamily building area types per DBCA C405.3.2.

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**ASHRAE 90.1-2016 Prescriptive Path.**

1. General Requirements

Follow the guidelines within the national 2018 COMcheck program using ASHRAE 90.1-2016 and include the Envelope, Mechanical, and Lighting compliance certificates with the submittal plans for review where applicable.

2. Additional Efficiency Requirements

a. The national 2018 COMcheck program will not allow the user to choose an Additional Efficiency Requirement. The 2019 DBC states that TWO of the three requirements listed in DBC C401.2.1.a are required to demonstrate compliance with the 2018 IECC. The two chosen requirements shall be clearly identified on the plans. Provide drawings, calculations, and documents which graphically indicate, label, and/or specify building assemblies, equipment, luminaires, and enhanced lighting controls in compliance with the selected Additional Efficiency Package Options. Below are the DBC conditions for when Additional Efficiency Requirements are required.

i. For all new construction, regardless of the building size, TWO Additional Efficiency Requirements are required.

b. Below are the DBC conditions for when Additional Efficiency Requirements are not required, included for clarify.

i. For new tenant spaces, no Additional Efficiency Requirements are required.

ii. For additions, no Additional Efficiency Requirements are required. Section C502.1 is proposed to be amended in 2020 to indicate that tenant spaces where the area of work is 10,000 square foot or more shall comply with TWO Additional Efficiency Requirements, only requirements that apply to systems being altered or new for the addition can be utilized.

iii. For existing tenant spaces, no Additional Efficiency Requirements are required. Section C505 will be included in the 2020 errata for existing tenant spaces, indicating that TWO Additional Efficiency Requirements will be required when the following conditions are met:

- The area of work is 10,000 square feet or more; and
- Undergoing a change of occupancy or use; and
- There is an increase in demand for either fossil fuel or electrical energy.

Only those Additional Efficiency Requirements that apply to assemblies and/or systems being altered or are new for the alteration can be utilized.

3. Envelope Compliance

1. If the *Envelope Performance Factor* requirement is selected as one of the two requirements per DBC C401.2.1.a, show that the proposed envelope performance factor is equal to or less than 90% of the proposed envelope performance factor of Section 5. Calculations showing compliance shall be provided with the submittal plans.

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4. Mechanical Compliance

1. If the *HVAC Minimum Efficiency* requirement is selected as one of the two requirements per DBC C401.2.1.a, show that efficiency of the proposed HVAC design is a minimum of 10% greater than the HVAC minimum efficiency requirements of Tables 6.8.1. Calculations and schedules showing compliance shall be provided with the submittal plans. Section C401.2.1.a will be included in the 2020 errata to correct the intent of the amendment.

5. Lighting Compliance

1. If the *Interior Lighting Power Allowance* requirement is selected as one of the two requirements per DBC C401.2.1.a, the interior lighting power allowance shall be equal to or less than 75% (equal to or more than 25% better than code) of the lighting power allowance of ASHRAE-90.1 Table 9.5.1 or Table 9.6.1. Calculations showing compliance shall be provided with the submittal plans.

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