



# CITY PLANNING & DEVELOPMENT

Residential Remodeling Compliance for the 2021 IECC  
Information Bulletin No. 172

[kcmo.gov/planning](http://kcmo.gov/planning)

## Purpose

The purpose of this information bulletin is to provide guidance to the building community for complying with the 2021 International Energy Compliance Code (IECC) when working on single-family remodeling projects.

## Definitions

*Alteration* – Any construction, retrofit or renovation to an existing structure other than repair or addition. Also, a change in a building, electrical, gas, mechanical or plumbing system that involves an extension, addition or change to the arrangement, type, or purpose of the original installation.”

- Alterations shall be such that only manipulated parts of the building need be brought into compliance with the code, provided existing unaltered structures and systems maintain their existing level of conformance with the code (cannot be made worse).
- A change of Occupancy/Use and/or an addition exceeds what is covered under the scope of an alteration.

*Repair* – The reconstruction or renewal of any part of an existing building for the purpose of its maintenance or to correct damage. Common repairs include:

- Glass-only replacements in an existing sash and frame.
- Roof repairs.
- Repairs where only the bulb, ballast, or both within the existing luminaries in a space are replaced provided that the replacement does not increase the installed interior lighting power.
- Replacement of damaged trim pieces on a door frame.

*Building Thermal Envelope* – The basement walls, exterior walls, floors, ceiling, roofs, and any other building element assemblies that enclose conditioned space or provide a boundary between conditioned space and exempt or unconditioned space.

## Compliance Sections

### *Building Envelope R503.1.1*

Envelope alterations need to comply with either an exception below or all sections of R402 (new buildings) except for air leakage testing. Specific requirements that refer to the whole building have been excluded from compliance as well, since alterations usually only impact parts of buildings.

Exceptions:

- Storm windows installed over existing fenestration
- Existing ceiling, wall, or floor cavities exposed during construction, provided these cavities are filled with insulation
- Construction where the existing roof, wall, or floor cavity is not exposed
- Roof recover (adding a new covering over an existing covering)
- Roofs without cavity insulation with sheathing or insulation exposed during alteration and/or re-roofing shall have insulation added above or below the sheathing.
- Surface-applied window films

#### *Windows and Doors R503.1.1.1*

- Where some or all the existing fenestration is replaced with a new fenestration product, including sash and glazing, the replacement fenestration unit shall meet the applicable requirements for U-factor and Solar Heat Gain Coefficient (SHGC) as specified in Table R402.1.3.
- Where more than one replacement fenestration unit is to be installed, an area-weighted average of the U-factor, SHGC or both of all replacement fenestration units shall be an alternative that can be used to show compliance.

#### *Heating and Cooling Systems R503.1.2*

HVAC ducts and systems newly installed as part of an alteration must comply with Section R403 (Systems).

- Includes all subsections of R403.
- Insulation
- Installation and air sealing

#### *Service Hot Water Systems R503.1.3*

Service water-heating systems and equipment that are altered must comply with Section R403.5 to meet the IECC.

- Includes all subsections of R403.5 (Service Hot Water Systems).
- Circulation system controls (if installed)
- Pipe insulation

#### *Lighting Systems R503.1.4*

Alterations to lighting systems shall comply with section R404.1 (Lighting Equipment).

- Permanent lighting must be high efficacy
- Exception: Alterations that replace <10% of the luminaires in a space, provided the alterations do not increase the installed interior lighting power.

#### **Information to Include on Construction Documents (when applicable)**

Must be drawn to scale with sufficient clarity to indicate the location, nature, and extent of the work proposed, and show in detail pertinent data and features of the building, systems, and equipment. Please refer to [IB 171 RE](#) and [IB 100](#) for more Information. Where there is an alteration or repair, the plans must specify the following:

1. Energy Compliance path
2. Insulation materials and their R-values
3. Fenestration U-factors and SHGC
4. Area-weighted U-factor and SHGC calculations, if used
5. Mechanical system design criteria per ACCA Manual J, S, and D - if applicable and may be deferred to time of mechanical permit for Prescriptive Compliance
6. Mechanical and service water-heating systems and equipment types, sizes, and efficiencies
7. Duct sealing, duct and pipe insulation, and location details or notes
8. Air sealing details or notes

Information can be presented in several ways:

1. On the drawings - Include elevations that indicate window, door, and skylight areas and sections that show insulation position and thickness.
2. On sections and in schedules - For instance, list R-values of insulation on sections and include U-factors, shading coefficient, visible light transmittance, and air infiltration on fenestration and opaque door schedules.
3. Through notes and callouts - Note that all exterior joints are to be caulked, gasketed, weather-stripped or otherwise sealed.
4. Through supplementary worksheets or calculations - Provide area-weighted calculations where required, such as for projection factors and heat capacity. You may include these calculations in the drawings, incorporate them as additional columns in the schedule, or submit completed code compliance worksheets.