

## REPI-144-21

*Add new Definition as follows:*

**EXTERIOR WALL ENVELOPE.** A system or assembly of exterior wall components, including exterior wall finish materials, that provides protection of the building structural members, including framing and sheathing materials, and conditioned interior space, from the detrimental effects of the exterior environment.

*Modify the Section as follows:*

**R502.3 Prescriptive compliance.** Additions shall comply with Sections R502.3.1 through ~~R502.3.4~~ R502.3.5.

*Add new Section as follows:*

**R502.3.5 Additional Efficiency Packages.** *Additions shall comply with Section R506. Alterations to the existing building that are not part of the addition, but permitted with the addition, may be used to achieve this requirement.*

**Exceptions:**

1. Additions that increase the building's total conditioned floor area by less than 25 percent.
2. Additions that do not include the addition or replacement of equipment covered in Sections R403.5 or R403.7.
3. Additions that do not contain conditioned space.
4. Where the addition alone or the existing building and addition together comply with Section R405 or R406.

*Modify the Section as follows:*

### **SECTION R503**

#### **ALTERATIONS**

**R503.1 General.** Alterations to any building or structure shall comply with the requirements of the code for new construction, without requiring the unaltered portions of the existing building or building system to comply with this code. Alterations shall be such that the existing building or structure is not less conforming to the provisions of this code than the existing building or structure was prior to the alteration.

Alterations shall not create an unsafe or hazardous condition or overload existing building systems. Alterations shall be such that the existing building or structure does not use more energy than the existing building or structure prior to the alteration. Alterations to existing buildings shall comply with Sections R503.1.1 through ~~R503.1.4~~ R503.1.5.

Add new Sections as follows:

**R503.1.5 Additional Efficiency Packages.** Alterations shall comply with Section R506 where the alteration contains two or more of the following:

1. HVAC unitary systems or HVAC central heating or cooling equipment serving the alteration area.
2. Water heating equipment serving the alteration area
3. 50% or more of the lighting fixtures in the alteration area.
4. 50% or more of the area of interior surfaces in the alteration area
5. 50% or more of the area of the building's exterior wall envelope

**Exceptions:**

1. Alterations that are permitted with an addition complying with section R502.3.5.
2. Alterations that comply with Section R405 or R406.

**SECTION R506**  
**ADDITIONAL EFFICIENCY PACKAGE OPTIONS**

**R506.1 General.** Where required in Section R502 or R503, the building shall comply with one or more additional efficiency package options in accordance with the following:

1. Enhanced envelope performance in accordance with Section R408.2.1.
2. More efficient HVAC equipment performance in accordance with R408.2.2
3. Reduced energy use in service water-heating in accordance with R408.2.3
4. More efficient duct thermal distribution system in accordance with R408.2.4
5. Improved air sealing and efficient ventilation system in accordance with R408.2.5

## Revisions and Reasons

The revised proposal provides a clearer threshold to ensure that the requirements only apply to substantial alterations. Only alterations that include two or more items from the list would be subject to the requirements. Each of these items are themselves substantial alterations of the major energy systems in a home. 50% is used as the area threshold for Level 3 alterations in the IEBC.

This approach was chosen over the Level 1-3 approach in the IEBC because those thresholds are not well-tuned to the energy systems. Those thresholds are concerned primarily with egress and accessibility, so they are framed in terms of reconfiguration of spaces, that is, the moving of doors or windows. A building could be completely gutted, completely reskinned, with all lighting, space conditioning and water heating equipment replaced and still only be considered a Level 1 alteration as long as no door or windows were moved/added and the equipment

replacements did not include additional equipment. Conversely, an alteration might be considered Level 3 because it includes substantial alterations to egress paths but include only minimal impacts to energy systems.