

CED1-203-22

IECC: C406.1.3, C503.6, 503.6 (New)

2024 International Energy Conservation Code [CE Project]

delete the definition of "exterior wall envelope"

Add new definition as follows:

SUBSTANTIAL IMPROVEMENT. Any repair, reconstruction, rehabilitation, alteration, addition or other improvement of a building or structure, the cost of which equals or exceeds is more than 50 percent of the market value of the structure before the improvement or repair is started. If Where the structure has sustained substantial damage, any repairs are considered substantial improvement regardless of the actual repair work performed. The term Substantial improvement does not, however, include either the following:

1. Any project for i Improvement of a *building* required to correct existing health, sanitary or safety code violations identified ordered by the *building official*, or and that are the minimum necessary to assure safe living conditions.
2. Any a Alteration of a historic structure historic building provided that where the alteration will not preclude affect the structure's building's continued designation as a historic structure historic building.

Revise as follows:

~~C406.1.3 Substantial Alterations to Existing Buildings. The building envelope, equipment, and systems in alterations to buildings exceeding~~

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~~5000 square feet (46.5 m²) of gross conditioned floor area shall comply with the requirements of Section C406.1.1 and C406.1.2 where the alteration includes replacement of two or more of the following:~~

- ~~1. HVAC unitary systems or HVAC central heating or cooling equipment serving the alteration area, not including ductwork or piping.~~
- ~~2. 80% or more of the lighting fixtures in the alteration area.~~
- ~~3. Building envelope components in the alteration area including new exterior cladding, fenestration, or insulation.~~

C503.6 Additional credits. ~~Alterations shall comply with measures from Sections C406.2 and C406.3 to achieve not less than 10 percent the number of required efficiency credits from Table C406.1.1 based on building occupancy group and climate zone. Where a project contains multiple occupancies, credits in Table C406.1.1 from each building occupancy shall be weighted by the gross floor area to determine the weighted average project energy credits required. Accessory occupancies shall be included with the primary occupancy group for purposes of this section. Alterations that are substantial improvements shall comply with measures from Sections C406.2, Section C406.3, or both to earn the number of required credits specified in Table C406.1.1 based on building occupancy group and climate zone. Where a project contains multiple occupancies, credits specified in Table C406.1.1 for each building occupancy shall be weighted by the gross conditioned floor area to determine the weighted average credits required. Accessory occupancies shall be included with the primary occupancy group for the purposes of this section. Credits shall be earned where all conditioned spaces in the building comply with the credit requirements.~~

Exceptions:

- ~~1. Alterations that include replacement of no more than one of the following:
 - ~~1.1 HVAC unitary systems or HVAC central heating or cooling equipment serving the work area of the alteration.~~
 - ~~1.2 Water heating equipment serving the work area of the alteration.~~
 - ~~1.3 50 percent or more of the lighting fixtures in the work area of the alteration.~~
 - ~~1.4 50 percent or more of the area of interior surfaces of the thermal envelope in the work area of the alteration.~~
 - ~~1.5 50 percent or more of the building's exterior wall envelope, including fenestration.~~~~
1. Portions of buildings devoted to manufacturing or industrial use.
2. Alterations to buildings where the building after the alteration complies that comply with Section C407.

Rationale:

This modification to the approach of CED1-203. A series of modifications to the original concept submitted for IECC-2024 have resulted in 3 consequences:

1. The alterations subject to the requirement have been narrowed substantially.
2. The requirements for the projects have become successively less stringent, requiring less efficiency improvements from the projects. The current requirements have been calibrated to ensure that enough credits from C406 will be available even for the least extensive alteration that met the threshold.
3. The language has become more complex to address technical issues.

This proposed modification pivots on the original concept to address these issues.

1. It is reasonable to assume that most of the projects that will be subject to these requirements will be projects that qualify as substantial improvements. Smaller projects can more easily be divided so that each major alteration to an energy system is on a separate permit. Therefore, it makes sense to simplify the trigger by making only alterations that qualify as substantial alterations subject to the requirements. Substantial Improvement is a defined term in the IBC and IEBC, so already is an established term and threshold in the I-Codes.
2. Substantial improvements have significant scope. It is therefore reasonable to require them to achieve more than the minimal number of credits required in the current draft. The requirement has been set at the credit requirement from Table C406.1.1, while still allowing credits from both C406.2 and C406.3. This means that projects will be required to achieve fewer credits than new buildings (since they are only subject to one of the credit tables), but will be able to achieve them in a more flexible way (since they will be able to choose from both the efficiency credits in C406.2 and the other credits in C406.3).
3. The result is a much simpler and straightforward requirement, with fewer opportunities for unintended consequences, that will also likely save more energy.