

Code Review

2018 Changes to International Codes

IECC - COMMERCIAL - ELECTRICAL TAC

W A R N I N G

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W A R N I N G



Energy Conservation Code (IECC)- (Commercial) Electrical Technical Advisory Committee (TAC)

2018 International Energy Conservation Code – Commercial – Electrical

Electrical TAC

IECC- Energy Commercial Code Change No.	IECC-Energy Commercial	Change Summary b/t 2015 IECC and 2018 IECC	Change Summary b/t 2017 FECC and 2018 IECC.	Staff comments		
CE226-16	C202 (New), C405.10 (New)	<p>Adds new definition "VOLTAGE DROP". Adds new Section C405.10 "Voltage drop in feeders and branch circuits". A limitation on the amount of allowed voltage drop will reduce the energy consumption of buildings and is currently in ASHRAE Standard 90.1-2016 due to addendum c to Standard 90.1-2013</p> <p>Cost Impact: Will increase the cost of construction. While this proposed requirement has a theoretical impact on building cost, it is followed in most cases as standard practice; consequently there is not expected to be an overall cost increase.</p>	This change is not similar to that of the FEC-C. The FEC-C provides for Florida specific changes to these sections	Overlapping provision to be considered during step 2 of the code change process		
<p>TAC Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> NO: <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>		<p>Commission Action Accommodate Florida Specific Need: YES (Select Criteria) <input type="checkbox"/> NO: <input type="checkbox"/> a. <input type="checkbox"/> b. <input type="checkbox"/> c. <input type="checkbox"/> d. <input type="checkbox"/> e. <input type="checkbox"/> f. <input type="checkbox"/> Others (Explain): <input type="text"/></p>			TAC	Cmsn.
				<input type="checkbox"/> No Action Needed	<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/> Overlapping provisions	<input type="checkbox"/>	<input type="checkbox"/>

Rule 61G20-2.002 2. Technical amendments needed to accommodate the specific needs of this state include but are not limited to amendments to the Florida Building Code that provide for the following:

a. Establish minimum life safety construction requirements to protect buildings and their occupants from fire, wind, flood, and storm surge using the latest technical research and engineering standards for buildings and materials products. b. Provide for flood protection provisions that are consistent with the latest flood protection requirements of the National Flood Insurance Program. c. Maintain eligibility for federal funding and discounts from the National Flood Insurance Program, the Federal Emergency Management Agency, and the United States Department of Housing and Urban Development. d. Provide for energy efficiency standards for buildings that meet or exceed the national energy standards as mandated by Title III of the Energy Conservation and Protection Act. e. Maintain coordination with the Florida Fire Prevention Code. f. Provide for the latest industry standards and design

Code Change No: CE226-16

Original Proposal

Section: C202 (New), C405.10 (New)

Proponent: Steven Ferguson, representing American Society of Heating, Refrigerating and Air-Conditioning Engineers (sferguson@ashrae.org)

Add new definition as follows:

VOLTAGE DROP. A decrease in voltage caused by losses in the wiring systems that connect the power source to the load.

Add new text as follows:

C405.10 Voltage drop in feeders and branch circuits. The total voltage drop across the combination of feeders and branch circuits shall not exceed 5 percent.

Reason: A limitation on the amount of allowed voltage drop will reduce the energy consumption of buildings and is currently in ASHRAE Standard 90.1-2016 due to addendum c to Standard 90.1-2013. When conductors are not sized to limit voltage drop, they will use additional energy in conductor resistance losses. This proposal will make the IECC consistent with 90.1-2016, which will be adopted by reference in the IECC and consistent with recommendations in the NEC.

While footnotes to tables in the NEC suggests that conductor sizing be adjusted to limit voltage, these footnotes are not requirements, so providing a 5% limit to voltage drop in the energy code will have impact on those who do not follow the NEC table footnote suggestions.

Cost Impact: Will increase the cost of construction

While this proposed requirement has a theoretical impact on building cost, it is followed in most cases as standard practice; consequently there is not expected to be an overall cost increase.

Report of Committee Action Hearings

Committee Action:

Approved as Submitted

Committee Reason: Approval was based on the proponent's published reason statements

Assembly Action

None

Final Action Results

CE226-16

AS

CE226-16

C405.6.3 Voltage drop.

~~**C405.6.3.1 Feeders and customer-owned service conductors.** Feeder and customer-owned service conductors shall be sized for a maximum voltage drop of 2 percent at design load.~~

~~**C405.6.3.2 Branch Circuits.** Branch circuit conductors shall be sized for a maximum voltage drop of 3 percent at design load.~~

The conductors for feeders and branch circuits combined shall be sized for a maximum of 5% voltage drop total.