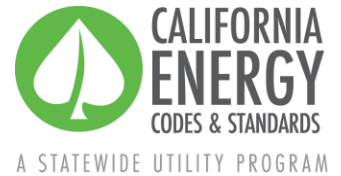


# Proposal Summary



## 2022 California Energy Code (Title 24, Part 6)

### Nonresidential HVAC Controls - Variable Air Volume (VAV) Minimum Airflow Rates

Updated: Friday, September 6, 2019

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#### Introduction

The document summarizes proposed revisions to the California Energy Code (Title 24, Part 6) that will be discussed during a utility-sponsored stakeholder meeting on October 15, 2019. The Statewide Utility Codes and Standards Enhancement (CASE) Team is seeking input and feedback. To provide your comments, email [info@title24stakeholders.com](mailto:info@title24stakeholders.com) by October 29, 2019.

#### Measure Description

This measure would allow terminal box minimum airflow requirements to be based on outdoor flow rate as opposed to a fixed minimum. The measure is based on research conducted for ASHRAE Research Project (RP)-1515, which was co-funded by the California Energy Commission PIER program and evaluated occupants' thermal comfort and air quality satisfaction of reduced airflows using lab and field studies. Findings from RP-1515 resulted in the approval of Addendum AU to ASHRAE 90.1-2016, which reduced minimum airflow requirements. This measure proposes to align Title 24, Part 6 with ASHRAE Standard 90.1

#### Draft Code Language

The proposed changes to the Standards and Reference Appendices are provided below. Changes to the 2019 documents are marked with red underlining (new language) and ~~strikethroughs~~ (deletions). Expected sections or tables of the proposed code (but not specific changes at this time) are highlighted in yellow.

#### **SECTION 140.4 – PRESCRIPTIVE REQUIREMENTS FOR SPACE CONDITIONING SYSTEMS**

**(d) Space-conditioning Zone Controls.** Each space-conditioning zone shall have controls designed in accordance with 1 or 2:

1. Each space-conditioning zone shall have controls that prevent:
  - A. Reheating; and
  - B. Recooling; and
  - C. Simultaneous provisions of heating and cooling to the same zone, such as mixing or simultaneous supply of air that has been previously mechanically heated and air that has been previously cooled either by cooling equipment or by economizer systems; or



2. Zones served by VAV systems that are designed and controlled to reduce, to a minimum, the volume of reheated, re-cooled, or mixed air are allowed only if the controls meet all the following requirements:

A. For each zone with direct digital controls (DDC):

i. The volume of primary air that is reheated, recooled or mixed air supply shall not exceed the larger of:

a. 50 percent of the peak primary airflow; or

b. The design zone outdoor airflow rate as specified by Section 120.1(c)3.

ii. The volume of primary air in the dead band shall not exceed ~~the larger of:~~

~~a. 20 percent of the peak primary airflow; or~~

~~b. T~~ the design zone outdoor airflow rate as specified by Section 120.1(c)3.

iii. The first stage of heating consists of modulating the zone supply air temperature setpoint up to a maximum setpoint no higher than 95°F while the airflow is maintained at the dead band flow rate.

iv. The second stage of heating consists of modulating the airflow rate from the dead band flow rate up to the heating maximum flow rate.

B. For each zone without DDC, the volume of primary air that is reheated, re-cooled, or mixed air supply shall not exceed the larger of the following:

i. 30 percent of the peak primary airflow; or

ii. The design zone outdoor airflow rate as specified by Section 120.1(c)3.