

Title 24, Part 6 2019 Code Development Survey for Building Departments

Introduction

Although the 2016 Title 24, Part 6 of the California Energy Standards are just going into effect January 2017, development of code language for the 2019 Standards is already well underway! Receiving input from as many code users as possible is a high priority among code developers, so this survey was created to hear your feedback about how proposed 2019 measures may affect your work.

If you would like to participate in upcoming Stakeholder Meetings in February and March, or learn more about code measures included in this survey, visit <http://title24stakeholders.com/>. **Thank you for taking the time to complete this survey!**

About You

1. What is your role at your building department?

- a. Building Official
- b. Counter Technician
- c. Plans Examiner
- d. Building Inspector

2. What type of projects do you primarily work on?

- a. Residential
- b. Nonresidential
- c. Both Equally

Residential Envelope Measures

1. High Performance Walls

- Types of building impacted: Single family and low-rise multi-family residential
- Building system impacted: Exterior walls
- Anticipated type of change: Prescriptive
- Description of change- Lower prescriptive wall U-value in climates where it's cost effective

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

2. High Performance Attics

- Types of building impacted: Single family and low-rise multi-family
- Building system impacted: Attic/Roof/Ducts
- Anticipated type of change: Prescriptive Requirement
- Description of change- Require R-19 underdeck insulation for tile roofs (Option A), with corresponding equivalent cases for Options B & C, and asphalt roof cases. Require R-19 underdeck insulation for tile roofs (Option A); with corresponding equivalent cases for Options B & C, and asphalt roof cases

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

3. Improved Fenestration Products

- Types of building impacted: Single family and low-rise multi-family residential
- Building system impacted: Exterior walls
- Anticipated type of change: Prescriptive
- Description of change- Reduce U-factor and SHGC requirements for windows and doors for single family and low-rise multifamily buildings to reflect market realities and cost-effective options available.

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

4. Quality Insulation Installation (QII)

- Types of building impacted: Single family and low-rise multifamily residential
- Building system impacted: Impacts building shell: walls, attic/roof, framed floors
- Anticipated type of change: Mandatory Measure
- Description of change: Propose changing QII HERS inspection from compliance credit to mandatory measure
 - Already a prerequisite for 2016 CALGreen tiers
 - Expand QII inspection criteria to properly address box netted insulation under roof deck, and flash and batt installations with non-uniform spray foam application
 - Investigate ways to improve QII compliance and performance in the field
 - Are there ways to improve and streamline the compliance process?

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

Residential HVAC and Res and Nonres IAQ Measures

5. Residential Quality HVAC

- Types of building impacted: Single family residential, Low rise multi-family residential
- Building system impacted: Heating and air conditioning
- Anticipated types of changes: Added compliance option, change to mandatory verification procedures, change to HERS test protocol
- Description of changes - This measure is comprised of 4 sub-measures, which are described below.

1 of 4: TSA refrigerant charge verification: Adopt temperature split and airflow (TSA) performance verification as an optional alternative to refrigerant charge and airflow (RCA) verification for all newly installed and replacement air conditioners and heat pumps (except mini-splits). This measure is pending development of additional supporting data and CEC approval.

2 of 4: FID Specification Change: Modify existing Fault Indicator Display Specification in JA6 to accommodate available products that can be used in lieu of refrigerant charge verification, and that can earn compliance credit for long term fault detection (similar to FDDs).

3 of 4: FDD compliance option: New compliance option for fault detection and diagnostic (FDD) systems on new and replacement air conditioners.

4 of 4: DOE 2019 Furnace Fan harmonization: Update fan efficiency requirement to correspond to 2019 DOE Residential Furnace Fan standards.

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

6. Residential Indoor Air Quality (IAQ)

- Types of building impacted: Single family residential, Low rise & high-rise multi-family residential
- Building system impacted: Ventilation for indoor air quality, HVAC filtration, Kitchen hoods
- Anticipated types of changes: Update to reference indoor air quality code (ASHRAE 62.2); Possible increase of HVAC ; filter efficiency; Enforcement of kitchen hood compliance with current code
- Description of changes: This measure is comprised of 3 sub-measures, which are described below.

1 of 3: Adoption of ASHRAE Standard 62.2-2016: Includes increase in ventilation rate and calculation of ventilation rate based on assumed infiltration equivalent to 2 ACH50 (varies by climate zone). Also reclassifies high-rise residential buildings to fall under Standard 62-2 instead of 62.1. Resolves conflicting language in Title 24 Parts 4 and 6.

2 of 3: Compliance option for smart ventilation systems: Smart Ventilation offers energy and IAQ benefits. Proprietary solutions exist, but need to find approach which supports technology advancement without excessive Title 24 credits."

3 of 3: Mandatory verification of kitchen range hood ASHRAE 62.2-2016 compliance: Would require HERS raters to verify HVI labeling and listing to confirm capability to meet minum100 cfm and 3s one requirements. First step in process of moving towards having efficient and effective range hoods installed in new single and multi-family buildings.

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

7. Nonresidential Indoor Air Quality:

- Types of building impacted: All commercial buildings
- Building system impacted: Ventilation
- Anticipated types of changes: Mandatory change
- Description of changes: Align Title 24, Part 6, Section 120.1 –“Requirements for Ventilation” with ASHRAE 62.1 requirements:
 - Ventilation rate calculations
 - Expand T24 occupancy types

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

Residential Water Heating

8. Compact Hot Water Distribution Design

- Types of building impacted: Single family new construction
- Building system impacted: Hot water distribution system
- Anticipated type of change: Compliance option
- Description of change- Simplify compact hot water distribution Title 24 implementation, eliminate HERS inspection requirement in current comp option

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

Nonresidential Lighting

9. Indoor Sources

- Types of building impacted: Nonresidential
- Building system impacted: Lighting
- Anticipated type of change: Prescriptive
- Description of change- This measure is proposing to reduce lighting power densities (LPDs) for all nonresidential indoor areas by updating Tables 140.6-B, 140.6-C, 140.6-D, and 140.6-G. This measure will build on the new ASHRAE 90.1/189.1 proposals by using all LEDs for LPD calculations. This measure will also investigate potential quality requirements for LED GSL lamps and tubes, and investigate variable correlated color temperature (CCT) systems in terms of their energy consumption and how they can meet compliance.

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

10. Outdoor Sources

- Types of building impacted: Nonresidential
- Building system impacted: Lighting
- Anticipated type of change: Prescriptive
- Description of change- This measure is proposing to reduce lighting power allowances (LPAs) for all nonresidential outdoor areas. Specifically, this measure is proposing to evaluate and calculate all outdoor LPAs using LEDs as the baseline and update Tables 140.7-A and 140.7-B. This measure will also ensure that all new LPAs can be met with warm temperature LEDs (3000K).

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

11. Indoor Controls

- Types of building impacted: Nonresidential
- Building system impacted: Lighting
- Anticipated type of change: Mandatory
- Description of change-

Mandatory Automatic Daylight Dimming Plus OFF Controls

This measure proposes to require nonresidential automatic daylight dimming controls to include the OFF step to be more aligned with ASHRAE 90.1. The proposed daylighting dimming plus OFF control step will be mandatory and apply to the luminaires in the primary sidelit daylit zone and the skylit daylit zone. The existing Title 24 Power Adjustment Factor (PAF) for daylight dimming plus OFF would be removed. The PAF criteria for daylight dimming plus OFF control is specified in section 140.6 specifies in which the daylight control and controlled luminaires shall additionally turn lights completely OFF when the daylight available in the daylit zone is greater than 150 percent of the illuminance received from the general lighting system at full power.

Mandatory Occupant Sensing Full OFF Controls in Nonresidential Restrooms

This measure proposes mandatory occupant sensing full OFF controls in nonresidential restrooms with multiple stalls to be more aligned with ASHRAE 90.1. This measure would apply to nonresidential restrooms that are greater than 100 square feet and less than 5,000 square feet.

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

12. Advanced Daylighting Design

- Types of building impacted: Nonresidential
- Building system impacted: Lighting
- Anticipated type of change: Prescriptive
- Description of change- Consider requirements that encourage a comprehensive approach to daylighting with the focus on improved daylight distribution:
 - Provide PAF for shading devices (fixed louvers with calculated angle)
 - Introduce requirements for clerestories (prescriptive for selected building type(s))
 - Consider requirements for skylights (prescriptive for selected building type(s) to meet lower ceiling requirement than current requirement)

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

Nonresidential HVAC

13. NR Proposals Based on ASHRAE 90.1-2016

- Types of building impacted: Nonresidential
- Building system impacted: HVAC
- Anticipated type of change: Prescriptive
- Description of change-This measure is comprised of four (4) sub-measures, which are described below.

1 of 4: Fan System Power: This measure will update fan system power requirements to align with ASHRAE 90.1 Table 6.5.3.1-1 Fan Power Limitation, and Table 6.5.3.1-2 Fan Power Limitation Pressure Drop Adjustment. The measure will also investigate strengthening the fan system power equation coefficients.

2 of 4: Exhaust Air Energy Recovery: This measure will evaluate the feasibility of incorporating the ASHRAE 90.1 Section 6.5.6.1 prescriptive exhaust air energy recovery requirements. Requirements will be presented in a similar method as Tables 6.5.6.1-1 and 6.5.6.1-2.

3 of 4: Equipment Efficiency: This measure will capture updates to mandatory equipment efficiencies in the ASHRAE 90.1 Section 6.8.1 tables.

4 of 4: Water Side Economizer: This measure will align with the language for integrated water-side economizers and maximum pressure drop for pre-heating coils in ASHRAE 90.1 Section 6.5.1.2. In addition, it will align with Addenda to ASHRAE 90.1-2010 by requiring water-side economizers for hydronic systems, and include heat rejection fan requirements.

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

14. Cooling Tower Minimum Efficiency

- Types of building impacted: Nonresidential
- Building system impacted: HVAC
- Anticipated type of change: Prescriptive
- Description of change- This measure proposes increasing the cooling tower minimum gpm/ton requirement.

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

15. NR Economizer Fault Detection Diagnostics (FDD) Requirements

- Types of building impacted: Nonresidential
- Building system impacted: HVAC
- Anticipated type of change: Mandatory
- Description of change- Economizer fault detection and diagnostics (FDD) enables automatic detection and diagnosis of economizer faults, such as a sensor failure, that can improve economizer operation. The proposed code change would introduce FDD requirements for built-up air handlers greater than 54,000 kBtu/h in capacity. FDD systems can be standalone, such as those on-board many packaged systems, or they can be integrated into a building direct digital control (DDC) system.

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

16. Induction Exhaust Fan Control (Laboratory Spaces)

- Types of building impacted: Nonresidential
- Building system impacted: HVAC
- Anticipated type of change: Mandatory
- Description of change- This measure will establish a mandatory requirement regulating how induction exhaust fans are specified. A wind speed measuring station will be required to control discharge velocity of induction exhaust fans as cross winds vary. Additionally this measure will establish a prescriptive baseline fan power allowance for pollutant exhaust systems.

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

17. Loading Dock Seals (Warehouses)

- Types of building impacted: Nonresidential
- Building system impacted: HVAC
- Anticipated type of change: TBD
- Description of change- This measure seeks to reduce heat loss and heat gain through loading dock doors and seals, by limiting heat transmission through the closed door (U-factor) and limiting infiltration through the seal.

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

18. High Efficiency Fume Hoods (Laboratory Spaces)

- Types of building impacted: Nonresidential
- Building system impacted: HVAC
- Anticipated type of change: TBD
- Description of change-

Automatic Fume Hood Sash Closure Systems:

This measure would propose a prescriptive requirement that automated sash closure systems be installed in new laboratory exhaust systems that meet certain design criteria. Automatic sash closure systems would likely be required on larger fume hoods in facilities in which hood operating hours are typically high. Automated sash closure systems would be equipped with automatic controls that detect the presence of laboratory technicians in front of the fume hood. The system would likely use an infrared sensor for technician proximity sensing, and there would likely be a manually override option that would enable users to override the automatic controls. When the technician moves away from the hood, the sash will automatically lower, thereby reducing the airflow through the sash to minimum airflow levels; energy consumption will be reduced accordingly. To provide a margin of safety, a built-in 30 second delay will ensure that the technician has not simply turned away for a brief moment. Since the savings associated with this measure depend on the controls being installed and calibrated correctly, the CASE Team will consider whether this measure should include an acceptance test to verify the system is operating correctly at the time of permitting.

Glove Boxes/Iris Ports in Lieu of Fume Hoods:

In cases where a fume hood is specified to store or manipulate nonhazardous chemicals, it may be possible to utilize a glove box in lieu of a fume hood. The proposed measure would provide compliance credit for utilizing a glove box, which are smaller and require less ventilation and exhaust than a fume hood in certain situations. The proposed standard would not apply to all fume hoods. During the CASE effort, the Team will identify the most appropriate uses.

How might this measure affect your plan review or building inspection? Will it make checking compliance easier or harder?

Other Energy Code Compliance Challenge

In addition to proposed measures for 2019, we would like your feedback to help ease other challenges that many code users have described.

19. **Inconsistent Documentation:** we have heard from jurisdictions, designers, and builders that inconsistent compliance documentation is big challenge. Which options below do you think would be most successful?
- a. All forms to be included as separate packet printed on Letter size paper (8.5 x 11")
 - b. All forms to be added to full size drawing sets
 - c. Other _____

Thank you again for taking the time to complete this survey! To learn more about code measures included in this survey, visit <http://title24stakeholders.com/>.