

DOCKETED

Docket Number:	22-BSTD-01
Project Title:	2025 Energy Code Pre-Rulemaking
TN #:	253245
Document Title:	Aeroseal Comments
Description:	N/A
Filer:	System
Organization:	Aeroseal
Submitter Role:	Public
Submission Date:	11/17/2023 4:49:04 PM
Docketed Date:	11/17/2023

*Comment Received From: Maggie McCarey
Submitted On: 11/17/2023
Docket Number: 22-BSTD-01*

Aeroseal Comments

Additional submitted attachment is included below.



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November 17, 2023

California Energy Commission
715 P Street Sacramento, CA 95814

RE: Docket No. 22-BSTD-01, 2025 Energy Code Pre-Rulemaking

Introduction

Aeroseal is a climate technology company that uses a proprietary air sealing technology to seal leaks in building ductwork and envelope. Aeroseal's technology was developed at the US Department of Energy (DOE)'s Lawrence Berkeley National Laboratory with partial funding from the DOE and the Environmental Protection Agency. Aeroseal provides envelope and duct-sealing services to new and existing residential and commercial buildings.

Aeroseal has a network of over 1,000 dealers that operate in all 50 states across the United States. This robust network has completed more than 230,000 energy-saving seals nationwide, including a growing market in California.

Aeroseal estimates that across commercial and residential buildings in the United States, leaky ducts cost \$3 billion in wasted energy annually. According to EnergyStar, duct sealing alone can address up to 20% in energy savings for households¹. Aeroseal's unique technology radically lowers air leakage from homes and commercial buildings thus reducing energy waste, reducing energy costs for consumers, and improving building performance, durability, and health. As California equitably decarbonizing its buildings, technologies like Aeroseal are increasingly important to cost-effectively transition to a net-zero future.

Aeroseal supports builders nationally to cost-effectively meet code, Energy Star, and other new construction air sealing and duct sealing requirements to deliver significantly improved building

¹ [ENERGY STAR: Benefits of Duct Sealing](#).

energy performance and indoor air quality. We appreciate this opportunity to provide comments and recommend two additional amendments to California’s 2025 Energy Code (“Draft Code”).

1. **Building envelope air leakage:** The Draft Code should stipulate a maximum air leakage rate for residential new construction that is equivalent or greater than the 2021 International Energy Conservation Code (IECC) for both prescriptive and performance paths.
2. **Leakage testing:** The Draft Code should require testing of envelope and duct leakage levels using blower door and duct blaster testing to ensure leakage requirements are implemented and enforceable. Visual inspections should not be permissible.

Detailed Comments

Please find Aero seal’s detailed comments below.

- I. **Aero seal recommends that the Draft Code should (1) stipulate a maximum air leakage rate, (2) ensure this rate is equivalent to national model codes at a minimum, and (3) require field testing to ensure air leakage requirements are met and are enforceable for residential buildings.**

Section 110.7 requires that “All joints, penetrations and other openings in the building envelope that are potential sources of air leakage shall be caulked, gasketed, weather-stripped or otherwise sealed to limit infiltration and exfiltration.” Air sealing requirements will not achieve the intended outcome without required maximum permissible air leakage rates paired with blower door testing requirements. *Maximum leakage requirements should be set and align with the 2021 IECC for residential at a minimum.* The 2021 IECC mandates the following:

2021 IECC Climate Zones	2021 IECC
1,2	5 ACH50
3+	3 ACH50

It is worth noting that Section 150.0(o)1.C(ii) (*Whole-dwelling unit mechanical ventilation for single-family detached and townhouses*) of the Draft Code requires single-family detached and townhouses to use a default Effective Annual Infiltration Rate of 2 ACH50. If actual leakage is significantly higher, this will result in over-ventilation and energy waste due to much more air leaking through the building envelope than assumed in the design of the ventilation systems.

Unenforced and untested air sealing requirements may have unintended consequences for other HVAC components that should be designed based on the true air leakage rates of the building. Testing air leakage is required in the residential 2021 International Energy Conservation Code (IECC) and across many jurisdictions in the United States. *CA should require air leakage testing for new construction in Subchapter 7 as a mandatory requirement for both prescriptive and performance pathways for residential single family, as well Subchapter 10 as a mandatory requirement for both prescriptive and performance pathways for multi-family buildings.*

To limit air leakage and therefore energy loss from California's new buildings, AeroSeal recommends that the following changes be made to the Draft Code:

1. Stipulate maximum allowable air leakage rates;
2. Align maximum allowable air leakage rate to the 2021 IECC standards, and be at most 5 ACH50 in IECC climate zone 2 and 3 ACH50 in IECC climate zones 3-6; and
3. Require verification of air leakage using a blower door test for both the prescriptive and performance paths.

II. AeroSeal recommends that the Draft Code avoid testing exceptions for envelope and duct leakage.

AeroSeal commends the duct leakage and testing requirements set forth in 150.0(m)11. However, section 150.2(b)1.E.iii (*Altered space-conditioning system - duct sealing*) provides an exception from field testing to allow for visual inspection. It is widely recognized that visual inspections to verify leakage do not provide accurate results, and that quantifiable, diagnostic tools like blower door and duct blaster tests are much more reliable. A survey conducted by the [Midwest Energy Efficiency Alliance in 2018](#) found that visually inspected homes tend to have insufficient levels of ventilation jeopardizing occupant health and safety.

To ensure indoor health and avoid energy waste, AeroSeal recommends that the Draft Code require a blower door test to test for air barrier and duct leakage and not permit a visual inspection.

Conclusion

AeroSeal commends CA for its continued leadership in energy efficiency and climate policy, and appreciates the opportunity to submit these comments. We are happy to share more information as needed to ensure that the Draft Code delivers highly efficient new construction aligned with California's climate and greenhouse gas reduction requirements.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Maggie McCarey', with a stylized flourish at the end.

Maggie McCarey
Head of Policy and Market Development
Aeroseal