



June 4, 2015

CALIFORNIA ENERGY COMMISSION
Dockets Office
1516 Ninth Street, MS-4
Sacramento, CA 95814-5512

Re: Docket Number 15-BSTD-01
2016 California Title 24 Update Process

California Energy Commission

DOCKETED

15-BSTD-01

TN # 75875

JUN 04 2015

Dear CEC Staff:

Thank you for the opportunity to provide comments on the 15 day language for Title 24 Chapter 6.

This comment focuses on significant residential energy savings that could be realized by permitting the use of one ventilation standard, ASHRAE 62.2, when specifying the mechanical ventilation requirements of all dwelling units, whether in low-rise or high-rise buildings; while it is likely too late in the 2016 process to make this change, I would like to request that CEC place this recommendation on its list of items to be considered during the next code revision.

As you are aware, CA references ASHRAE 62.2 for mechanical ventilation requirements for low rise dwelling units and references the CA Mechanical Code (Title 24 Part 4) for ventilation requirements of high rise dwelling units. CA's specification of different requirements for dwelling unit ventilation as a function of building height is based on the ASHRAE 62.2's (low-rise) and ASHRAE 62.1's (high-rise) division of scope that has been in place over the last couple of decades.

In October of 2014, scope change addenda were finalized by ASHRAE to move all non-transient dwelling unit ventilation requirements from ASHRAE 62.1 to ASHRAE 62.2, regardless of building height.¹ The term "non-transient dwelling unit" used by ASHRAE is essentially the same as the term "residential dwelling unit" used in CA BEES. This change was strongly supported by both committees for the following reasons:

- Ventilation rates for dwelling units should be consistent across all dwelling units, regardless of building height. Why should a dwelling unit in a 4 story building require an outdoor ventilation rate that is up to two times higher than that in a 3 story building?
- The ASHRAE 62.2 committee has been exclusively focused on residential ventilation for the last couple decades, and has more expertise in this area than the 62.1 committee.

¹ The scope change to 62.2 is addendum g, which was published by ASHRAE in February 2015 and included as Appendix A to this comment.

What are the Benefits of Transitioning to One Ventilation Standard for All Dwelling Units?

If CA BEES were to permit ASHRAE 62.2 to be used to determine the mechanical ventilation requirements of all residential dwelling units, CA could expect the following benefits:

- Save significant energy: As an example, a 1000 sqft 2 bedroom apartment in a three story building currently requires 53 cfm of outdoor air (using equation in ASHRAE 62.2 Section 8.2.1). The same unit in a four story building in CA currently requires 75-150 cfm of outdoor air, depending on the type of HVAC system installed (CA Mechanical Code, equations 403.2.1 and 403.2.3). Up to 65% of the ventilation energy currently required for high-rise dwelling units can be saved by simply transitioning dwelling unit ventilation requirements to ASHRAE 62.2.
- Simplify the ventilation requirements across dwelling units: Having identical mechanical ventilation requirements across all dwelling units will greatly simplify system design, specification, and code enforcement.
- Provide attention to combustion safety: For example, makeup air is required for exhaust appliances if natural draft appliances are within the pressure boundary and the exhaust rates of two largest exhaust appliances exceeds 15 cfm/100 sqft. As an alternative, the user can elect to not specify natural draft appliances.
- Minimize the noise levels associated with outdoor air ventilation fans: Set a maximum sone level of 1.0 for non-remote outdoor air ventilation fans. This increases the likelihood that users will actually operate them to provide better IAQ.
- Provide field verification of the outdoor air flow rate: This commissioning is a crucial step to ensure that the system performs as designed.
- Properly size ducts: Local exhaust system ducts are required to comply with a prescriptive duct sizing chart or be field verified for flow to ensure that they operate as designed and required by code.

Thank you for your consideration of this comment, and I hope to see CEC lead the effort in partnership with the Department of Housing and Community Development to coordinate this beneficial change across California's codes.

Sincerely,



Mike Moore, P.E.
ASHRAE 62.2 Indoor Air Quality Subcommittee Chair

Appendix A: ASHRAE 62.2-2013 Addendum G

FOREWORD

With regard to multifamily dwellings, at the current time Standard 62.1 has responsibility for buildings 4 stories or more and Standard 62.2 has responsibility for buildings 3 stories and less. The ventilation rates for dwelling units in Standard 62.1 are different from the rates in Standard 62.2 resulting in different ventilation rates for all units depending on whether there are three stories or four. Additionally, Standard 62.1 does not address modest retrofits whereas Standard 62.2 does. Given the growth of the retrofit industry in multifamily dwellings it is important to ensure that these situations are covered in ASHRAE's ventilation standards. This scope change would do away with the building height separation, bringing the dwelling units themselves into Standard 62.2 regardless of height. This will allow for consistency within dwelling units and also allow application of ASHRAE ventilation standards to the multifamily retrofit market. This change proposal is aligned with a companion proposal by SSPC 62.1.

Addendum g to 62.2-2013

Revise the title of Standard 62.2 as shown below.

Ventilation and Acceptable Indoor Air Quality in ~~Low-Rise~~ Residential Buildings

Revise Section 1 as shown below.

1. PURPOSE

This standard defines the roles of and minimum requirements for mechanical and natural ventilation systems and the building envelope intended to provide acceptable indoor air quality (IAQ) in ~~low-rise~~ residential buildings.

Revise Section 2 as shown below. The rest of Section 2 remains unchanged.

2. SCOPE

This standard applies to dwelling units in residential occupancies in which the occupants are non-transient, spaces intended for human occupancy within single family houses and multi family structures of three stories or fewer above grade, including manufactured and modular houses. This standard does not apply to transient housing such as hotels, motels, nursing homes, dormitories, or jails.

Add the following new definitions to Section:

3. DEFINITIONS

non-transient: occupancy of a dwelling unit or sleeping unit for more than 30 days.

residential occupancies: occupancies that are not classified as institutional by the authority having jurisdiction and that also contain permanent provisions for sleeping.

sleeping unit: a room or space in which people sleep, that can also include permanent provisions for living, eating, and either sanitation or kitchen facilities but not both. Such rooms and spaces that are also part of a dwelling unit are not sleeping units.