

April 12, 2012

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

Re: Docket Number 12-BSTD-01

<b>DOCKET</b>	
<b>12-BSTD-1</b>	
DATE	APR 12 2012
RECD.	APR 13 2012

Dear CEC Staff:

We appreciate the opportunity to provide comments on the proposed language for the 2013 Building Energy Efficiency Standards. This comment addresses the proposed definition for makeup air in Section 100.1 and the proposed requirements for limiting makeup air in Section 140.9(b).2.A.

The 45 day language proposes an amended definition of makeup air that improves upon the 2008 definition by removing unnecessary, permissive language. In keeping with this trend, the following changes are proposed to further simplify the definition of makeup air.

**MAKEUP AIR** is outdoor air that: is intentionally conveyed by openings or ducts into the building from the outside; is supplied to a space that freely communicates with the vicinity of an exhaust hood; and replaces air, vapor, and contaminants being exhausted by the exhaust hood. ~~Makeup air is generally filtered and fan forced, and it may be heated or cooled. Makeup air may be delivered through openings or ducts integral to the exhaust hood or through outlets in the same room.~~

The reasons for the proposed changes to the definition are as follows:

- Replacement of the phrase, "the vicinity of" with, "a space that freely communicates with". This change provides more clarification as to the intent of the location of makeup air introduction while providing the designer with increased flexibility.
- Remove the permissive and incomplete descriptions of makeup air in the second to last sentence. While makeup air may be "generally filtered and fan forced, and it may be heated or cooled", these are not requirements, meaning makeup air may equally not be any of these things. As such, the designer/specifier/contractor is clearly at liberty to make these design decisions, and therefore this information should not be included in the definition.
- Remove the permissive and incomplete descriptions of makeup air in the last sentence. Similar to the previous bullet, this is permissive language that reflects design decisions that should either be regulated within the main body of the code or not addressed at all. Regardless, it should not be included within the definition.

Application of the definition of makeup air occurs within Section 140.9(b).2.A, a section that addresses kitchen ventilation. A proposed improvement of this section is provided as follows:

## 2. Kitchen ventilation.

A. Mechanically cooled or heated makeup air delivered to any space with a kitchen hood shall not exceed the greater of:

- i. The supply flow required to meet the space heating and cooling load; or
- ii. The hood exhaust flow minus the available ~~transfer air from adjacent spaces~~. Available ~~transfer air~~ is that portion of ~~outdoor~~ ventilation, infiltration, and transfer air serving adjacent and immediate spaces not required to satisfy other exhaust needs, such as restrooms, and not required to maintain pressurization of adjacent and immediate spaces to acceptable levels, ~~and that would otherwise be relieved from the building.~~

The reasons for this proposed change are as follows:

- Reduce energy use. By recognizing infiltration, ventilation, and transfer air as “available air” that can be used to offset makeup air requirements, the makeup air requirements and associated cooling and heating loads can be reduced, thus saving energy.
- Remove the phrase, “from adjacent spaces”. The term “available air” is clarified in the next sentence, which is expanded to include “adjacent and immediate spaces”. This expansion is necessary to communicate that infiltration and ventilation air may be supplied from both immediate and adjacent spaces. For example, in a small restaurant with a large kitchen, much of the building infiltration may come from the component of the building envelope which forms part of the pressure boundary of the kitchen.
- Insert the phrase “to acceptable levels”. This clarifies the intent of the phrase, “not required to maintain pressurization of adjacent spaces”. For example, as currently written, the phrase could be misinterpreted to mean that all adjacent spaces should maintain a positive pressure with respect to the outdoors. By inserting the phrase, “to acceptable levels”, it is clear that this is not the case, but that unacceptable levels of depressurization must be avoided (e.g., those that could negatively impact life safety, indoor air quality, etc.).
- Insert the phrase, “and immediate”. This change will clarify that that pressurization of the kitchen must also be maintained to acceptable levels.

If you should have any questions, please feel free to contact me; thank you for your thoughtful consideration.

Sincerely,



Mike Moore, P.E.