

DOCKETED

Docket Number:	19-BSTD-03
Project Title:	2022 Energy Code Pre-Rulemaking
TN #:	237073
Document Title:	Association of Home Appliance Manufacturers (AHAM) Comments - 2022 Energy Code Pre-Rulemaking
Description:	N/A
Filer:	System
Organization:	Association of Home Appliance Manufacturers (AHAM)
Submitter Role:	Public
Submission Date:	3/9/2021 3:15:13 PM
Docketed Date:	3/9/2021

Comment Received From: Association of Home Appliance Manufacturers (AHAM)
Submitted On: 3/9/2021
Docket Number: 19-BSTD-03

2022 Energy Code Pre-Rulemaking

Additional submitted attachment is included below.



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March 9, 2021

Peter Strait
Supervisor, Building Standards Development
California Energy Commission
Docket Unit, MS-4
Docket No. 19-BSTD-03
1516 Ninth Street
Sacramento, California 95814-5512

via Email: info@title24stakeholders.com

Re: Staff Workshop on Ventilation for Indoor Air Quality and Reduced Infiltration Proposals

Dear Mr. Strait:

The Association of Home Appliance Manufacturers (AHAM) writes to comment on the TN236876_20210222T160652 and the supporting document CEC-500-2021-005. AHAM represents manufacturers of major, portable, and floor care home appliances, and suppliers to the industry. AHAM's membership includes over 150 companies throughout the world. In the U.S., AHAM members support more than one million jobs, have a \$198 billion economic impact, and produce more than 95% of the household appliances shipped for sale. In California, the home appliance industry is a significant and critical segment of the economy. The total economic impact of the home appliance industry to California is \$15.9 billion, more than 30,000 direct jobs and an additional 53,000 indirect jobs, \$2.4 billion in state tax revenue and more than \$5 billion in wages. The home appliance industry, through its products and innovation, is essential to U.S. consumer lifestyle, health, safety and convenience. Through its technology, employees and productivity, the industry contributes significantly to U.S. jobs and economic security. Home appliances also are a success story in terms of energy efficiency and environmental protection. New appliances often represent the most effective choice a consumer can make to reduce home energy use and costs.

As AHAM stated in its November 17, 2020 comments to this docket, indoor cooking, its ventilation and the quality of air in homes are important issues to AHAM. Indeed, home appliance manufacturers have long sold products to exhaust cooking byproducts and ensure that all cooking appliances sold meet exacting safety standards. In addition, the home appliance industry manufactures other products that help treat and improve air quality in our homes, such as air cleaners, vacuums, and air conditioning and circulation products such as window and portable air conditioners, humidifiers, and dehumidifiers.

CEC Title 24 -2022 Proposal

We do appreciate that AHAM and our directory has been added to the 2022 text to acknowledge the approval we received in 2020. We have over 2500 lines of various range hood model data in our directory from seven manufacturers.

AHAM requests the California Energy Commission (CEC) to review the goals of updating building codes and assess the most effective way to amend existing standards. AHAM supports CEC's interest to include Capture Efficiency (CE) for range hoods but the proposed standard does not include testing methods that produce repeatable and reproducible results so it is premature to be adding to Title 24 at this time.

Capture Efficiency Target

CEC states that building codes updates for ventilation should be framed as capture efficiency but allowing an equivalent airflow in recognition that the number of available products with CE test results may be limited for some time (CEC-500-2021-005, p. 67). AHAM appreciates the alternate to CE built into the 2022 Building code but note that the alternate is not merely for lack of products. The alternative is necessary since the method is not currently repeatable, reproducible, and only tested in one lab at this time. This testing also requires significantly more lab time than CFM testing, which translates into certification costs that will be passed on to the consumer.

Additionally, the states the most important limitation of the study is the unknown bias of a small non-random sample used (CEC-500-2021-005, p. 21). This limitation is repeated throughout the report and thus should not be sufficient for regulatory changes.

Lastly, the report is based on three different capture efficiency methods, including one that uses boiling water and then a cross walks back to the recommended CE values. The report notes that the translation is uncertain (CEC-500-2021-005, p. 59). The team then chose a conservative approach to define CE based on simulated CFM rather than CE determining air flow. It is unclear if pilot units have been removed from the simulation studies as numerous studies referenced include pilot light models that are not currently available in the market. It was noted that simulations for NO₂ concentrations were simulated for 4 h from the start of cooking (p. 50), and that the meal was simplified as 4 burners operating for 21 minutes with a constant emission rate of 7 kBtu/h per burner (p. 52). There has been no validation testing in application of the recommended simulated values. This is not sufficient evidence for regulatory changes

As AHAM has stated previously, improvements for CE test methods, including the E-3087 test procedure, are being reviewed but have not undergone a consensus process. The current procedure continues to be refined to address the significant repeatability and reproducibility issues its test results show. Additionally, only one lab has been running the test and adequate tolerances are needed to cover this expected variation across labs. To set any requirement, CEC first needs a reliable test that produces consistent results from test to test and lab to lab and covers the products that will be installed in California homes. No such procedure exists for CE. Indeed, the CE test proposed by CEC, ASTM E-3087-18, acknowledges in its own text that its reproducibility and repeatability have not been validated and that it does not cover all types of range hoods. Moreover, CASE's own testing shows that the test is unreliable. Without a reliable measure of capture efficiency, no meaningful regulatory requirement can be set for CE even as an alternate method.

The report states that HVI is close to certifying CE (CEC-500-2021-005, p. 48), which is presumptuous without any clear indication that it is. HVI 917 is still not public and it has not been through a consensus review process. Data from this method cannot be depended on for a regulatory requirement.

Cubic Feet per Minute Target

In CASE's Market Analysis in Support of Single-family and Updated Multifamily Range-Hood Requirements from Dec 30, 2020¹, they establish in Table 1 that an 80% Capture Efficiency correlates to a 222 cubic feet per minute (CFM), which sets the minimum air flow that a range hood needs to achieve on at least one speed setting. CASE argues that CEC should keep the higher values for CFM they are considering but AHAM disagrees. As noted previously, three different methods were used to assemble this data and none are directly correlated to the other with data but only simulations. Thus, although the T24 CASE regression equation that was relied has a low R squared value, it is at least based on actual testing and not simulations. The requirement of 280 CFM should be reduced to 220 CFM (rounded from the T24 recommendation of 222 CFM for 0.80 CE).

Lastly, it is unclear why CEC is making a distinction now between range hoods based on airflow and the cooktop's fuel type when California is doing more research on asthma causes. Also, the ISAAC group reported that they detected no evidence of an association between the use of gas as a cooking fuel and either asthmas symptoms or asthma diagnosis². There should be one CFM value for a range hood especially when the building code allows gas but has electric ready installations and vice versa. The range hood should stay in place even if the unit is changed out below the range hood.

Automatic Mode

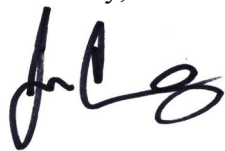
An automatic mode for range hoods is being reviewed by safety standards organizations. Safety organizations must approve any changes in this area prior to marketplace introduction. To that end, a technical panel, which includes input from building fire professionals, has been formed under UL 507 to review an automatic mode and any additional requirements it would require.

Conclusion

Consumer use of their range hood is a significant challenge. Simplifying the requirement to one number, 220 CFM on at least one speed setting, allows industry to focus on both the consumer and technical enhancements of range hoods, which ultimately encourages consumer use, including nominal installed flow, noise levels and range hood capture efficiency. All testing methods need to be established through a consensus process and demonstrate that they are repeatable and reproducible across labs and products before they are codified.

AHAM appreciates the opportunity to comment on this pre-rulemaking proceeding. We understand and appreciate CEC's stated commitment and willingness to address this matter and look forward to continuing to work with CEC to resolve it.

Sincerely,



Jacob Cassidy
Director, Government Relations

¹ Market Analysis in Support of Single-family and Updated Multifamily Range-Hood Requirements, Mia Nakajima et al, Dec 30, 2020.

² Cooking fuels and prevalence of asthma: a global analysis of phase three of the International Study of Asthma and Allergies in Childhood (ISAAC), Gary WK Wong, et al.