

*Comment Received From: QC Manufacturing INC  
Submitted On: 6/21/2021  
Docket Number: 21-BSTD-01*

**Re Docket 21-BTSTD-01 Procedures Whole House Fan Airflow Verification, #TN237703 and CASE technical report by David Springer**

*Additional submitted attachment is included below.*

Adrian Ownby  
California Energy Commission  
Docket Unit, MS-4  
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**Re: Docket 21-BTSTD-01 Procedures Whole House Fan Airflow Verification, #TN237703 and CASE technical report by David Springer, March 2021**

Submitted by: Justo Tarula, M.S.M.E.  
Engineering Manager  
QC Manufacturing, Inc.

The following comments are submitted in order to voice our comments and concerns regarding test procedures for whole house fan airflow submitted by Adrian Ownby. We will label our comments below to line up accordingly with the labelled conclusions in the original CASE document.

**4.1.1** We are in agreement with the findings, the current default degradation factor of 67% is not realistic, and unjustly penalizes builders in compliance software when HERS rating is not performed. In addition, having the software degrade the modeled airflow by 67%, results in almost 75-90% of all EDR compliance gains to be removed, as we are seeing as little as 0 EDR points compliance difference in climate zones 9,11,13-14.

This 67% degradation should be adjusted to a 33% degradation when HERS verification is not selected.

**4.1.2** This is no longer an issue in 2019 code. QC Manufacturing and any other whole house fan manufacturers must provide T24 engineers precise specifications on cfm/watts that the fans are able to attained in the field, and the installation of adequate code required 1/750 NFVA venting is REQUIRED in order for any fan to hit that in the field. We have over 1000 homes passed on the state registry with 2019 HERS tested values, and 100% of those homes had the code required venting of 1/750 NFVA. If even 1 sq of venting is missing, will result in a HERS failure of 100-400 cfm.

No further degradations are required to ensure adequate ventilation is installed, as the HERS measure itself resolves this matter.

**4.2 RA 3.9.4.1.1** Thank you for eliminating the front door blower door test and replacing it with the new attic pressure matching method described in section 4.3.

**4.2 RA 3.9.4.1.3** We agree the passive flow hood method should be removed for the reasons listed by Mr. Springer. It should no longer be an approved device for testing whole house fans, as the highest measurable airflow rate is not even 40% of the average airflow rate of a whole house fan system.

#### 4.3 New Attic Pressure matching method listed in new RA 3.9.4.1.1

We are not in opposition to this new method, as the results look promising.

- It allows vertical mounted WHF to be tested using the method.
- It allows for testing of WHF mounted over structural items such as stairs and built-in cabinets.

This method has not been properly tested with a wide variety of products to include

- Direct drive, PSC, ECM belt driven products may react differently to this test
- This method has not been tested on homes with 2 or 3 whole house fans
- It has not been tested on single/2story/3 story homes extensively
- This method should require CEC approved and HERS WHF certified equipment, just as other WHF airflow devices have been made to obtain CEC approval for airflow measurement devices.
- HERS raters should not be allowed to create their own airflow verification devices, as the results will be unstable, and can affect the measurement apparatus adversely, and also affect whole house fan performance adversely.
- This method is not viable for roof mounted WHF that direct vent to the outside, as there would be no attic pressure to measure.

Should you have any questions, please do not hesitate to contact me via email at [justo@qc-mfg.com](mailto:justo@qc-mfg.com).

Sincerely,



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QC Manufacturing, Inc.