HOME VENTILATING INSTITUTE

ANSI Accredited Program
PRODUCT CERTIFICATION
#0841

MEMBER OF
Indoor Air Quality
ASSOCIATION INC.

U.S. GREEN BUILDING COUNCIL MEMBER

31 July 2014

Abigail Daken, Product Manager
ENERGY STAR for HVAC
Via email to: ventilatingfans@energystar.gov

RE: ENERGY STAR Program Requirements Product Specification for Residential Ventilating Fans version 4.0 draft

Dear Ms. Daken,

Thank you for the opportunity to provide input on the EPA's proposed changes to the ENERGY STAR Program Requirements Product Specification for Residential Ventilating Fans version 3.2. Our intent herein is to summarize the input of HVI Members and Staff who are familiar with and have a stake in this ENERGY STAR program.

HVI represents the majority of manufacturers of residential ventilating products, and suppliers to the industry. HVI's membership includes over 50 companies throughout the world who offer their products for sale in North America. HVI members employ thousands of people and produce more than 90% of the residential ventilating products shipped, valued at more than $500 million annually. The residential ventilation 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 US jobs and economic security. Residential ventilating products are a success story in terms of energy efficiency and environmental protection, while improving the indoor air quality for consumers.

HVI strongly supports the EPA in their efforts to provide incentives to manufacturers, retailers, and consumers for continual energy efficiency improvement, as long as product performance can be maintained for the consumer. That said, we believe that your current proposal to tighten the performance requirements for ENERGY STAR residential ventilating fans undermines your efforts and is not in the best interests of the industry or consumers. Frankly, HVI believes that EPA, using unsubstantiated market penetration analyses, is trying to do too much too fast, the consequences of which will negatively impact both consumers and manufacturers by unnecessarily limiting ENERGY STAR offerings in the residential ventilating fan category.

It was noted by EPA officials during the July 10 stakeholders webinar that it's been "quite some time" since the ventilating fan specification was modified. While we understand EPA's eagerness to maintain the relevancy of the product specification by strengthening the requirements, we respectfully request that EPA consider incremental revisions to the ventilating fan requirements on a more regular schedule to avoid burdening consumers and industry alike with an overzealous plan such as that presented in V4.0.

Our analysis indicates that a significant percentage of models which are currently ENERGY STAR certified (or in the process of becoming certified under the current V3.2 spec) will fail at least one of the new V4.0 requirements as follows:

	Bath Fans	Inline Fans	Range Hoods	Other Room/Utility Fans
Will fail at least one V4.0 requirement	47%	67%	19%	33%

In other words, the changes proposed will reduce the percentage of ESTAR eligible models from 31% of the HVI Certified Products Directory (CPD) listings down to 13% of the HVI CPD listings which unceremoniously cuts the number of ESTAR models available in the market in half. This is a disservice to consumers and manufacturers.

We offer the following input:

Issue #1: INACCURATE MARKET PENETRATION FIGURES

HVI is concerned that the main premise being used to justify the tightening of these requirements, i.e., 70% market penetration in 2012, is incorrect. In response to my recent request for background information on the origin of that figure, EPA discovered an error in the formula which resulted in a retraction of the 70% figure. As we understand it, the revised figure for 2012 is 33% and 31% for 2013.

EPA officials have stated that the formula for determining market penetration is "probably not accurate" as it is based on incomplete research done in 1999 with a standard growth rate applied year-to-year. HVI would argue that your revised figures are still far from accurate given the changes which have occurred in the industry throughout the last 15 years (number of manufacturers, code changes, technology improvements, consumer behavior, etc.). Our internal analysis suggests that market penetration is closer to 19% for all product categories covered by the product specification. According to the *ENERGY STAR® Products Program Strategic Vision and Guiding Principles*, "As a general rule, product specifications will be reviewed for possible revision at least once every three years or when the market share of qualified products reaches about 35%." The current specification became effective April 1, 2012, so we are not yet at the three year mark, and we are not at 35% market penetration. HVI is not arguing that certain changes to the specification are not warranted at this time; however, we feel that EPA may have been a bit overzealous with the proposed changes as a result of the mistaken belief that market penetration was at 70%.

Issue #2: OVERLY AGGRESSIVE EFFICACY THRESHOLDS

HVI is concerned that the proposed increase in the Efficacy requirements for bathroom exhaust fans and inline fans is too aggressive. We would like to examine the possibility of long term strategic discussions on performance increases. Manufacturers and sellers can then plan a smooth and controlled improvement. Instead, we request that EPA consider incremental adjustments to the efficacy thresholds as follows:

Product Type	V3.2	V4.0 draft	HVI proposal, first increment	HVI proposal, second increment
Bath Fan, 50-89 cfm	1.4	2.8	2.0	2.8
Bath Fan, 90-200 cfm	2.8	3.5	3.0	3.5
Bath Fan, 201-500 cfm	2.8	4.0	3.5	4.0
Inline Fans	2.8	3.8	3.2	3.8

We propose the revised first increment be implemented in this revision cycle and the second increment in the next 3 year cycle, after the strategic meetings. This less aggressive approach will reduce the number of disqualified bath fans from 38% to 28% of the currently qualified models and will reduce the number of disqualified inline fans from 67% to 35% of the currently qualified models.

Issue #3: ARBITRARY LIMITS ON RANGE HOOD AIR FLOW

HVI is concerned that the restricting range hoods to those which are less than 600 cfm on high speed is ill-founded. It is HVI's understanding that the EPA feels the threat of backdrafting justifies the 600 cfm limit. We would argue that no upper limit should be dictated in the specification so long as the range hood is suitable for its installed purpose. Further, establishing best practices and regulations related to backdrafting and make-up air is the responsibility of codes bodies, not the EPA. Codes dictate the make-up air requirements and those requirements will vary based on whether there are combustion appliances present. Certainly the EPA is not interested in getting into the business of establishing code requirements? And if so, we ask you to consider that backdrafting is a potential issue for any exhaust fan, not just range hoods.

Further, current construction practices commonly result in larger houses and open floor plans where kitchens are not mostly enclosed, and larger kitchen appliances are installed. The recommended minimum air changes per hour in these "gourmet kitchens" would necessitate a larger fan (greater than 600 cfm) to adequately serve the space, so consumers should be given the opportunity to select an appropriate ENERGY STAR certified fan. At this point, EPA has essentially restrained trade of the high-end range hood manufacturers whose products are ineligible to earn the ENERGY STAR certification as a result of this arbitrary and unnecessary restriction. Since kitchen range hoods account for just 1% of the ENERGY STAR ventilating fan shipments in 2012 and 2013, HVI would argue that EPA should seek to expand the ENERGY STAR offerings in the range hood category by establishing more realistic performance criteria.

Issue #4: EFFECTIVE DATE OF V4.0 SPECIFICATION

HVI is concerned that the effective date for the new specification will interfere with verification testing cycles in progress and recommends that the implementation be timed to allow HVI and other Certification Bodies conducting verification to complete all open cycles. Based on EPA's current timeline, the new specification could be published in October 2014 and would become effective approximately nine months later – July 2015. We would ask that the effective date be delayed until January 1, 2016 so that the 2015 ENERGY STAR verification cycle is not adversely impacted.

Issue #5: CLARIFICATION OF UNCLEAR VERBIAGE

Throughout the draft specification, we have found examples of verbiage which is ambiguous, irrelevant, or otherwise unclear, making it difficult for manufacturers to follow and for Certification Bodies such as HVI to administer. We recommend the following clarifications:

A. Vent Fan Draft Spec V4.0, lines 285 – 304
We request the verbiage related to installation manual requirements be modified as shown below to eliminate the ambiguities and irrelevant phrases.

5) Inclusion of Installation Instructions and Consumer Recommendations: Picture diagram-type installation instructions shall be included with each certified ventilating fan. The ~~instructions~~ picture diagram shall indicate the following:

- *~~How~~ Where to properly seal the fan with caulk or other similar material to inhibit air leakage to the exterior of the thermal envelope of the building.*
- *Recommended ~~ductwork types, elbows (including radii), terminations, sealants, and lengths that will~~ configuration to minimize static pressure losses and promote adequate airflow.*
- *Proper installation ~~of vibration deadening materials such as short pieces of flexible duct~~ to reduce vibration.*
- *Proper installation of insulation around the fan or ductwork, as applicable, to minimize building heat loss and gain.*

B. Vent Fan Draft Spec V4.0, lines 93-102

The minimum speed of 50 cfm appears to be contrary to industry practices. Low airflow models are allowed in building codes and have been for years. The reasons to exclude models whose max speed is less than 50 cfm are unclear. Please clarify if fan speeds less than 50 cfm are exempt from efficacy and sound requirements only if the highest speed produces at least 50 cfm; or simply revert to the previous spec version's 10 cfm rating.

C. Vent Fan Draft Spec V4.0, lines 93-94

Clarification is needed as inline fans don't have sound requirements listed in the table, yet they are called out to meet the efficacy and sound requirements in the text.

D. Vent Fan Draft Spec V4.0, Table 1

The Range hood requirements only apply to Working Speed, so the descriptions in the Airflow (CFM) Range column only add confusion. HVI maintains that maximum limits on the airflow for range hoods are unwarranted. Further, the definition of Working Speed references minimum airflow. This maximum limit on the Working Speed airflow appears to be extraneous and does not benefit consumers who are looking for energy efficiency without sacrificing performance. If the Working Speed of a range hood is sufficiently quiet and efficient, why limit the performance? Recommend changing the entry for range hoods in the Airflow Range column to N/A.

E. Vent Fan Draft Spec V4.0, Table 1

There is some ambiguity regarding the groupings of fans based on airflow in Table 1. It is not specified if the airflow range is referring to the tested or rated airflow. Our preference is to use the rated airflow to give the manufacturers more flexibility.

F. Vent Fan Draft Spec V4.0, line 173

Option 1 indicates that all fans would be considered non-directional (line 173). There are fans that are currently qualified as directional luminaires. Would these particular fans be disqualified unless they use Option 2 going forward? The Lumen/watt and lumen output requirements vary, whereby the directional

luminaires may not meet those requirements when evaluated to the non-directional requirements.

G. Vent Fan Draft Spec V4.0, lines 186-202
There appears to be little to no benefit from the complexity of the lighting performance parameters that we are currently reporting. General consensus is that the majority of the lighting information is not used by consumers. Going forward, manufacturers would be responsible for tracking that the lamp shipped with the fan meets the Lamps specification (line 194). In light of this, the CB need only report if the fan is lighted and perhaps the lighting technology utilized, as all other lighting parameters are subject to change with an alternate lamp selection by the manufacturer.

H. Vent Fan Draft Spec V4.0, Table 2
Please update the Test Method References to HVI Publications as follows:
- *HVI Publication 916 Airflow Test Procedure© (2013)*
- *HVI Publication 915 Procedure for Loudness Rating of Residential Fan Products© (2013)*
- *HVI Publication 920 Product Performance Certification Procedure Including Verification and Challenge© (2013)*

I. Vent Fan Draft Spec V4.0, lines 209-210
"All certifying ventilating fan models, with the exception of in-line and range hood models…" makes no exclusion for direct discharge fans. Direct discharge fans aren't tested at 0.1" and 0.25", they are tested at 0.03" w.g., so the Installed Fan Performance is not applicable.

J. Vent Fan Draft Spec V4.0, lines 209-217
There is a discrepancy between the Installed Fan Performance verbiage (lines 209-212) and the Note immediately following (lines 214-217), in that the rated airflow is referenced, rather than the tested airflow. Again, rated airflows are preferred. Also, the Note indicates that Installed Performance applies to the fan's max airflow. Please clarify if this requirement is applicable only to max speed.

Issue #6: ABRUPTNESS OF PROPOSED CHANGES

Clearly the drastic nature of many of EPA's proposed changes has caused a great deal of controversy and anxiety among HVI's constituency who felt blindsided. To prevent this from recurring, HVI would like to suggest the establishment of a regular forum whereby EPA and manufacturers can develop a strategic plan outlining both short- and long-term changes to the Ventilating Fan product specification. We feel an ongoing discussion, at least annually, would benefit the ENERGY STAR program, industry manufacturers and their trade association, as well as consumers. For example, we recognize that EPA is considering whether sound on ventilating fans should be rated at 0.25" static pressure instead of the current 0.1" static pressure. This is a complicated issue which would benefit from collaborative discussions about the program objectives and industry realities. Questions to be considered include:

- Is this idea being driven by a vocal minority or is there true majority support among stakeholders to make this change?
- What impact does duct size have on an installed system's ability to achieve higher static pressures and should that be a determining factor in establishing sound requirement thresholds?
- If this change were implemented, what is the impact and cost to the manufacturers?
- What is the benefit to consumers?
- Should the industry standard practice for rating airflow at 0.1" SP be changed to 0.25" SP?

A similar discussion may be warranted between stakeholders and EPA about revising the specification to include fans designed to supply outside air to the building, as well as balanced ventilating products.

We are amenable to your ideas as to how this forum could take shape.

HVI appreciates the opportunity to provide this input for the ENERGY STAR Program Requirements Product Specification for Residential Ventilating Fans version 4.0 and we stand ready to engage in further discussions with EPA.

Kind regards,

Jacki Donner, CAE
Executive Director/CEO
Home Ventilating Institute