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Eurovent comments staff report commercial and industrial fans and blowers

Additional submitted attachment is included below.

EUROVENT
EUROPEAN INDUSTRY ASSOCIATION

The Secretary General

MAIL – 2018-07-25

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[Docket number 17-AAER-06] Input concerning Draft Staff Report on Appliance Efficiency Regulations for Commercial and Industrial Fans and Blowers issued June 2018

Dear Mr Galdamez,

The Eurovent Association in Brussels, which could be described as the European counterpart of AHRI and AMCA, represents more than 1.000 manufacturers and national associations of HVACR equipment. Many of our members are active in the United States and also producing there. Our working group 'Fan Technology' is home to 22 fan manufacturers. While we usually do not comment on US matters, our working group considers evolutions concerning your planned Appliance Efficiency Regulations for Commercial and Industrial Fans and Blowers as important and asked us to comment.

Experiences made in the European Union

In 2011, the European Union has implemented a fan regulation[1], which is currently under review. Since its introduction, the EU fan regulation is having a positive impact, has led to a significant improvement in fan technologies and energy savings, and is regarded as a reference legislation in many parts of the world. Today, for instance, comparatively inefficient belt driven fans are barely applied on the European market, and Brushless DC electric motor (commonly known as EC motors in Europe) and considered the norm.

Limit additional certification burdens

The European fan industry self-certifies ratings only for each fan's best efficiency point (BEP). Yet, the Fan Energy Index, according to the CEC proposal, would have to be certified for at least 6 fan pressures. To limit the additional certification burden and to prevent invalidating a significant amount of existing fan ratings, our members recommend that the title 20 regulation accepts existing laboratory accreditations, sampling plans, fan performance tolerances, and interpolation methods analogous to AMCA Publication 211.

[1] COMMISSION REGULATION (EU) No 327/2011, ecodesign requirements for fans driven by motors with an electric input power between 125 W and 500 kW, commonly known as 'ErP regulation'

Independency from electrical input current type

To ensure a level-playing field and equal benefits for end users, we recommend making clear that the proposed fan regulation is independent of electrical input current type, i.e. alternating current of any frequency and direct current.

Include ISO 5801

ISO 5801 entitled "Fans -- Performance testing using standardized airways" is one of the most significant global fan standards. It was omitted in the staff report. We thus recommend that the regulation simply refers to ANSI/AMCA 208 for the test procedure and FEI calculation. That standard by itself accepts physical air performances testing per AMCA 210 and ISO 5801 equivalently.

Normalisation to standard air density

All certified fan pressure and input power values necessary for FEI regulation should be normalised to standard air density.

Pressure basis for FEI ratings should remain at manufacturer's discretion

ANSI/AMCA 208 correctly distinguishes fan ratings for their pressure basis: Total pressure versus static pressure. The pressure basis for the FEI ratings should remain at the fan manufacturer's discretion, within the limits that AMCA 208 sets. The European Union fan regulation includes optional fan pressure bases and no problems or loopholes have resulted.

Let us name an example problem: It would be incorrect to insist on a total pressure rating if a housed centrifugal blower was designed for embedding into an application that does not represent an outlet condition according to a total pressure rating test.

FEI calculations

The FEI provides a novel method for comparing fans at a specified duty point. However, if a fan is sized smaller than ideal, then an intentional increase of the backpressure in the application improves this fan's FEI while consuming more power. The fan ratings therefore should be fully transparent: The supplier should disclose the Fan Electrical Power (FEP) alongside the FEI for that duty point.

ANSI/AMCA 208 specifies how the FEP is determined for the FEI calculations. The reference in the staff report to AMCA 207 is out of place and imprecise. The proposed revision of section 1606 would inadequately require certification of a transmission efficiency value and a controller efficiency value (both efficiencies vary with load, for which AMCA 208 accounts). Therefore, the certification requirement should be limited to identification of the transmission and controller type.

Thank you very much for giving us the opportunity to express our opinion and experiences made. If you have any questions, do not hesitate to contact us.

Yours sincerely,

Felix Van Eyken
Secretary General

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