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Ecodesign Consultation Forum, 25 September 2013, Brussels Comments regarding fan coil units

Dear Sirs,

We thank you for hosting for the Consultation Forum. You may recall that many industry stakeholders requested to delete noise requirements for fan coil units.

The “explanatory notes” state that fan coils are primarily heat exchangers and that they offer little potential for significant energy savings. Energy savings are mainly achieved at product system level, relating to system operating temperatures a.o... For this reason only ecodesign requirements related to noise emissions have been set.

Fan coil units would thus be the first product group that would not really contribute to the original core objective of the framework directive. There is no calculation or indication of the energy savings that could be achieved by introducing ecodesign requirements for fan coil units.

The arguments to further consider exclusion of the noise requirements for fan coil units are listed below:

1. Fan coil units are designed for different applications and the acoustic requirements are subject to specifications. These specifications vary from no requirements, e.g. deserted computer or server rooms to specifications limiting the sound power e.g. restaurants or showrooms.
Therefore there is no one-fit-all sound power level that could fit all requirements.
The impact on human health is thus considered by the designers of the installation in their specifications. In certain applications the requirement might even go beyond the proposed Ecodesign requirements.
The sound power is thus a typical application and not a product or device-specific parameter.
2. The sound power level is directly related to the airflow rate. If the sound power level is to decrease while maintaining the airflow rate, this can only be achieved by reducing the fan motor speed combined with a bigger fan and in the case of ducted units larger ducts.
The optimal and best efficiency of a fan coil unit is obtained when its motor functions close to its synchronous speed, in general near to the maximum speed. This results in a given sound power level. The sound power level can be reduced by running the fan coil unit at lower revolutions per minute (rpm). However the efficiency as defined in Regulation 327/2011 will decrease, in some cases even below the 2015 targets.

Maintaining the proposed sound power requirements will impose a complete redesign of fan coil units. The redesigned unit would have to use motors that run at lower rpm and that would as a consequence have to be combined with larger fans or more motors resulting in units that will be larger in size to meet the original design airflow rate but with more total energy consumption. Larger size means larger coils and higher water flow rates which will lead to higher pump consumption. The redesigned units would have lower energy efficiency and may to their bigger size present installation issues, both when new installations are designed and where existing units are replaced. The improved sound power level would be offset by a reduction in energy efficiency.

3. Ducted units present a further problem. When the speed of air is reduced, the available static pressure drops dramatically. Many existing ducted installations where duct and grills already present high static pressure losses would not be able to operate any longer. The redesigned fan coil units would not fit them either.

Eurovent trust these arguments are sufficient to consider the exclusion of fan coil units from the scope of a possible draft regulation that would cover Air heating products, cooling products and high temperature process chillers.

Eurovent and its members are available to further discuss these comments.

Looking forward to hear from you, we remain,

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'Felix Van Eyken', written over a horizontal line.

Felix Van Eyken
Secretary General