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Dear Mr. de Wilt,

EuP Lot 11 Fans - VDMA - Remarks on the Scope of the Draft Regulation for Fans

Following your request from the last Consultation Forum please find hereafter the position of VDMA.

VDMA is pleased to endorse the Commission by setting energy efficiency requirements for components and Products in the HVACR field.

As we did for fans integrated in products we will try to - wherever possible - proof the need for integration or exclusion of fan typs and application.

Please find below the abstract of our proposal concerning the scope:

A.) What shall be considered

Fans driven or designed to be driven by motors with an electric input power between 125 W and 500 kW, including those integrated in other products

VDMA **highly endorse** Article 1 1. as it is written. Including both standalone fans as well as fans integrated in products (OEM equipment) is reasonable, justified and target oriented. Exclusions shall be limited as far as possible and only made if their necessity is proofed. Exclusions shall not be made by mentioning specific products (washing and drying machines). In case of exclusions, it must be ensured that no loopholes exist to circumvent the regulation.

VDMA disapproves vehemently the attempt of specific stakeholder (OEMs) to exclude e.g.:

1.) **fans integrated in hoods of any size and design** (CECED position)

2.) **fans integrated in any kind of air-conditioning, ventilation and refrigeration equipment** (EPEE position)

3.) **fans integrated and/or build-on heating equipment, e.g. boiler** (BDH / EHI position)

VDMA documented the possibility to replace fans with low efficiency by higher efficient fans. VDMA and the fan industry refuted the stakeholders mentioned above with concrete examples. We will provide documents related to item 3. - fans integrated and/or build-on heating equipment - in week 18.

B.) What should be excluded

1.) Fans designed to operate in potentially explosive atmospheres as defined in Directive 94/9/EC

VDMA **endorse** Article 1 2. (a) as it is written. These fans are marked in accordance to the ATEX-Regulation. Therefore they can be easily and trustworthy identified.

2.) Fans designed for emergency use only, at short-time duty, with regard to fire safety requirements set out in Directive 89/106/EC

VDMA **endorse** Article 1 2. (a) as it is written. These fans are marked in accordance to the Regulation. Therefore they can be easily and trustworthy identified.

It is important to exclude solely fans which are designed for emergency use **only**!

Why is the term "only" so important? In praxis so called "dual-use-fans" and "dual-use-ventilation systems" applications can be found. The purpose of this kind of fan/product/system is to convey normal air into or out of a building in normal operation. Only in the very rare case of fire the fan/system must be suitable to transport hot air/smoke of a projected temperature for a assigned time. In 99 % of its operation time (in most cases the whole year round as it is used for normal ventilation) this fan/product/system is working under normal conditions. Normal conditions mean that there is no need for a specific design - required in terms of resistance against high temperature and particles conveyed - which inevitable result in a reduced efficiency. It is not reasonable to take these so called “dual use fans/systems” out of the scope. Politicians and industry run the risk of loopholes and a negative shift of the market away from efficient products turning to low efficiency products. It must be secured that this market shift will be prevented.

3.) Fans designed to operate as conveying fans used for the transport of liquid, solid, dusty and/or fibrous substances etc. in industrial process application

VDMA **requests** the Commission **to incorporate this additional exclusion**. Justification: In industrial processes, fans are widely used to transport many kinds of different substances. These substances induce inevitably wear out and can result in malfunction. For security reasons and to ensure functionality as well as usability during usage these fans must be of a specific design e.g. extended distance between blades or impeller and casing. For physical reasons, this results, of course, in lower efficiencies. It is obvious that fans transporting substances in the air can not have the same energy consumption as fans which just handle pure air. Energy efficiency of both types of fans can not be compared. See also the request from the Textile Machinery Association at VDMA.

4.) Fans designed where operating ambient temperature for the motor, if located outside the gas stream, driving the fan exceeds 100°C

VDMA **requests to increase the temperature limitation from 40°C to 100°C**. Justification: Several applications - with high number of units - are dealing with temperatures above 80°C, e.g. fans used for

process cooling and in condenser units. If all fans will be out of scope, the motor of which is located outside the gas stream and specified for operating ambient temperature of above 40°C, a very large amount of products (e.g. all heater blower) will fall out of the scope of this regulation.

5.) Fans designed where the annual average temperature of the gas being moved at the inlet of the fan and/or the operating ambient temperature for the motor, if located outside the gas stream, are lower than -40ºC

VDMA **requests to increase the temperature limitation from -15°C to -40°C**. Justification: Several applications - with high number of units - are dealing with temperatures below -15°C. See also the request from the Scandinavian countries tabled at the Consultation Meeting in Brussels.

6.) Fans designed to operate "in environments with abrasive and/or clogging substances in a quantity exceeding the normal amount of natural (ambient) air"

VDMA **requests to** modify the existing exclusion **by amendment of term "and/or clogging" and "in a quantity exceeding the normal amount of natural (ambient) air"**. Justification: Fixing of criterion for exclusion shall follow one systemic. We recommend to have technical or physical criteria as e.g. temperatures, number of rotations per minute, ratio between x and y as criterion for exclusion wherever possible. Exclusion of equipment by name as made under (vii) for tumble and washing dryers is not reasonable and would provoke discussions. Desirousness awakes from other OEMs. The criterion “clogging” will sufficiently address tumble and washing dryers. Exclusion made under (vii) is obsolete.

7.) Fans designed to operate with a specific speed $n_q < 0.05$ (Definition $n_q = n\ q^{0.5} / (p_f / r)^{0.75}$)

VDMA **requests to reword the criterion for exclusion**. Justification: The actual exclusion of fans with pressure ratios bigger than 1,11 is not targeting because there are many applications with higher pressure ratios where fans are used with high efficiency. Only the combination of low flow and big pressure increase is critical. Here centrifugal fans are used with impellers of a small blade tip width (b) / fan diameter (D) ratio. For physical reasons, fans with impellers of a blade tip width (b) / fan diameter (D) ratio lower equal 0,05 have only low efficiencies. If impellers with wider blades were to be used, they would run outside their optimal (duty?) point at even worse efficiency and at substantial safety hazard caused by fatigue cracks (breaks caused by disturbed flows). An alternative operation with partial return conduit to the suction side (bypass) is even more unfavourable in terms of energy. In order to avoid the mentioning of dimensions, we suggest using the specific speed as criterion for the exclusion.

8.) Fans designed in tumble and washing dryers

VDMA **requests to <u>delete</u> this criterion**. Justification: Fixing of criterion for exclusion shall follow one systemic. We recommend to have technical or physical criteria as e.g. temperatures, number of rotations per minute, ratio between x and y as criterion for exclusion wherever possible. Exclusion of equipment by name as made under (vii) for tumble and washing dryers is not reasonable and would provoke discussions. Desirousness awakes from other OEMs. The criterion “clogging” will sufficiently address tumble and washing dryers. Exclusion made under (vii) is obsolete.

9.) Fans driven by multifunctional motors, where the air-movement realised by the fan is not the main purpose of the product

VDMA **requests to put this additional exclusion**. Justification: There exist designs/appliances where a motor is used to drive a pump or another component (primary purpose) and where there is an additional fan mounted on the same (drive) shaft. This fan serves a secondary purpose here, e.g. air supply of an oil-fuelled high-pressure cleaning unit. Due to the fluctuating loads and the resulting fluctuations in speed, the fan cannot be optimised and the power consumption of the fan is low compared to the drive output of the motor. This is in response to the justified objection raised by several industries in VDMA, e.g. Cleaning Systems as well as the objection coming from EGMF. EPTA also confirmed its support**.**

10.) Fans solely used for cooling of its driving motor and directly mounted on the driving motor axle

VDMA **requests to put this additional exclusion**. Justification: This kind of fan is used for motor cooling exclusively. The impeller has to be mounted directly on the axis of the motor which drives it and needs to be cooled. Fans that are physically separated from the motor, e.g. fans for forced ventilation of (encapsulated) motors in highly explosive areas, are not meant here. This is in response to the justified objection raised by several industries in VDMA, e.g. Cleaning Systems as well as the objection coming from EGMF. EPTA also confirmed its support.

11.) Roof fans and Box fans

VDMA **request to exclude Box and Roof fans from the scope of Lot 11 and bring them under the scope of Lot 6** (DG -ENTR). Justification: Box and Roof fans are units and no fans in the real sense. Apart from the included fan, box and roof fans may contain other components as integral parts. Very important is the design of the enclosure and the installation position which – comparable to air handling units – highly influence the efficiency of the product. The fan it selves must follows the ecodesign requirements of Lot 11.

Should you have any questions or require any additional input, please do not hesitate to contact us.

With kind regards

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