

Position Paper, PP – 2014-12-02

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Date
2014-12-02

Eurovent position on the VHK 'discussion document' from 21 November 2014 on the review of the 'EU Fan Regulation' 327/2011

Background

On 21 November 2014, VHK, a Dutch consultancy responsible for the revision of Commission Regulation (EU) No. 327/2011 (hereinafter 'EU Fan Regulation'), has published a ['discussion document'](#) containing a proposal for a new text of the future 'EU Fan Regulation'. This proposal is based on stakeholder input following the revision process including the '1st stakeholder meeting', which took place on 1 October 2014 in Brussels. In its 'discussion document', VHK asks for concrete feedback, which Eurovent as a major stakeholder representing, through its national association members in the whole of Europe, both manufacturers producing and implementing fans offers within this document.

Key position

Eurovent and its members appreciate the work done by the VHK study team around Mr René Kemna. We particularly value and support the following proposals in the 'discussion document':

- Clear definition of a 'fan' as a configuration of impeller, stator, electric motor, transmission or direct drive and possibly a variable speed drive: Our members regard this as a major improvement compared to the definition that can be found in the current Regulation in place. The [Extended Eurovent Position on 'Fan Definitions' and the Regulation Scope](#) offers a clear and very detailed analysis in this respect.
- Excluding 'not final assembly' from the legislation: In our opinion, this not only marks a significant simplification of the Regulation, but also avoids currently persisting contradictions and complications resulting from having the impeller in the scope. This is regularly being outlined in our Papers including the initial [Eurovent Position on the EU Fan Regulation](#).
- No extension of the scope towards 'box and roof fans': Eurovent members hold that the current number and definition of fan categories as defined in the current Regulation is correct and shall remain. Following a national consultation procedure, a detailed explanation was offered with the [Eurovent Position on Box and Roof Fans](#).
- Allowing for a 'grace period' of 5 years regarding a replacement of no longer compliant fans: While we support this compromise solution, we would still appreciate a concrete line of action concerning the current Regulation in place. This was outlined in our [Eurovent Case Studies on 'Replacement Parts'](#) as well as [Extended Eurovent Position on Replacement Parts](#).
- Internal design control as a conformity assessment procedure: To Eurovent, an effective market surveillance is essential to protect the EU market from non-compliant products. While encouraging a flexible use of conformity assessment procedures as outlined within [Decision 768/2008](#), we hold that third-party certification is not the right approach. An explanation why was given in the [Eurovent Call for an Effective Market Surveillance for Fan Products](#).

Yet, Eurovent and its members also regard adjustments to the current 'discussion document' as critical. This specifically applies to the **proposed 2018 and 2020 efficiency levels!** Non-action on this issue would have a significant, negative impact on the European industry. This and other important points are being elaborated on in-depth on the following pages.

Proposed amendments

Exclusion of laundry and washer dryers as well as kitchen hoods not justified

VHK's arguments for excluding these product types is based on the

- Limited operating time of fans used in this type of appliances and their
- Small power scope.

That said, Eurovent reinforces that the basic definition of a fan is moving air against a certain pressure. We still hold that whenever the power and design of the fans used for these applications comply with the scope and definition of the 'EU Fan Regulation', such an exemption would create an artificial division in the technical standard of the products circulating in the EU Common Market.

Accordingly, we ask VHK and the European Commission to reconsider the exemptions of kitchen hoods, laundry and washer dryers. In this respect, we also refer to the definition of a fan as rightly proposed within the 'discussion document'. We do not regard the largely commercial-based arguments as valid enough to justify these exemptions.

Handling of ATEX fans within Regulation needs to be reviewed

Eurovent holds that in the design of ATEX fans, a number of safety-related design constraints exist. The lower efficiency of the ATEX motors is only one of them. The different physical size of the ATEX motors and the mandatory safety gaps between rotating and stationary parts impact the efficiency of different types of fans by a different measure.

Subsequently, we consider the 10% allowance as too small in order to compensate the effect of the currently mandated technology for these fans.

In the opinion of Eurovent and its members, given the very small size of the market for ATEX fans, regulating them is probably not justified. If a requirement must apply, it must be different according to the category of the product – a Category 1 fan is subject to heavier impacting design requirements than a Category 3 fan. The improvement in the technology of fans for standard applications may also not be applicable to ATEX fans, which implies that the deviation in efficiency may even grow in the future.

Amend text for fans designed for emergency need and fans handling toxic, highly corrosive or flammable gases or vapours

VHK proposes that the future Regulation shall not apply to fans which are specified to operate exclusively:

(a) for emergency use only, at short-time duty of 1 hour or more, with regard to fire safety requirements...

Eurovent holds that the words 'of 1 hour or more' should be deleted, because they conflict with at least one of the classes defined in EN12101-3.

(g) handling toxic, highly corrosive or flammable gases or vapours as set out in Regulation (EC) No 1272/2008 and its adaptations

In our opinion, the addition of the reference to Regulation (EC) No 1272/2008 does not help to distinguish real special purpose fans from more standard designs and should be deleted.

Implement the term 'drive system' when defining a fan

As indicated in the beginning, Eurovent fully supports and highly appreciates the proposed definition of fan as a configuration of impeller, stator, electric motor, transmission or direct drive and possibly a variable speed drive.

Yet, we suggest to implement the term 'drive system' instead of 'motor package' and reinforce the need to take care of how to manage third-party supplied VSDs and whether coordination with the ongoing work in the US on a similar subject may prove useful.

The proposed amendments stated above can also be found in the attached document [PG-FANS - 1411.70 - Eurovent Position on VHK Discussion Document version 2014-11-28](#) in a four-column amendment format for your convenience.

Last but not least, we regard significant amendments necessary concerning the proposed new Tier III and Tier IV requirements, including the reduction of the number of fan categories, new efficiency levels 2018 and 2020, as well as concerning the assessment of the conformity of jet fans! These are being outlined in the following.

Indispensable amendments

The proposed 2018 and 2020 efficiency levels have led to extensive discussions and concerns within Eurovent, its members and European manufacturers represented through them. A vast majority regards the proposed levels as unrealistic. Keeping the current proposal could significantly affect the overall well-being of the European HVAC&R industry.

Centrifugal fans

VHK proposes to merge the three current categories for centrifugal fans (forward-curved, backward-curved without scroll, backward-curved with scroll) into one.

Eurovent strongly recommends VHK and the European Commission to avoid merging the mentioned categories as proposed. This is due to the following technical reasons:

- The three existing main types of centrifugal fans may be optimised for the same applications, but resulting in radically different optimal shapes and dimensions.
- A reduction in the designers' options regarding fan types in combination with physical constraints leads to a choice of a non-optimum size of fan, operating in off-design duty. This results in an unsatisfactory operating efficiency. Similar impacts can be observed on the operating noise levels.
- This argument was accepted to justify the need to have separate target levels when drafting the existing Regulation 327/2011. No change in technology was introduced in the meantime that would justify different conclusions. This is particularly true regarding the difference between forward and backward-curved fans.

We also hold significant concerns regarding the proposed efficiency levels for 2018 and 2020 for the following technical arguments:

- In many cases, the suggested values for centrifugal fans significantly exceed the best available technology as recorded during the development of the current Regulation 327/2011, ANNEX IV.

- There is a limit to the improvement of technology and efficiency, and the suggested further steps imply a progressively increasing technological challenge without evidence that it may be available in the timeframe given within the 'discussion document'.

Besides the technical arguments, each regulatory step requires a significant investment from the European industry to adjust its product ranges. The typical payback time for industrial investments in the current economic climate in the European Union is three years or more. A legislation requiring repeated redesigns every two or, at the most, three years is financially not sustainable!

Based on the above-mentioned arguments and concerns, Eurovent offers the following solution:

We propose to unify just backward-curved fans with and without scrolls into a single category, paying attention to the restriction of backward-curved fans without housing to measurement category A and C, and then retain a separate category for centrifugal forward-curved fans and radial-blade fans. The category for backward-curved fans include fans with constant thickness blades, whether curved or flat, and air foil blades.

Concerning the complexity of efficiency requirements, Eurovent recommends not to increase the number of power sub ranges, and to rather keep the existing two.

Eurovent members are evaluating options for a single further level of efficiency requirements involving either a change in the slope or just the height of the curves. Any such further requirement should come into force after the European industry had a chance to recover the investment done in order to fulfil Tier II requirements of Regulation 327/2011. Eurovent members hold that 2020 is the earliest opportunity for such a step.

Axial fans

It is being suggested by VHK to introduce, in 2020, an efficiency increase ranging from 0% at the power of 125W, of 9% at 10kW, and of 19% at 200kW.

While valuing overall efficiency improvements of the revised Regulation, Eurovent and its members strongly ask to reconsider this proposal, which seems to be unrealistic.

Instead, Eurovent offers the following solution based on a feasibility assessment:

We suggest to keep the existing power sub ranges and equations, and to increase the N-value for installation types A and C, from N=40 in 2015 to N=42 in 2020, while keeping the current value for N for installation types B and D, as this value is considered to already be at the technology limit.

Jet fans

VHK proposes to use one single set of equations for conventional axial fans and jet fans, but these equations have a different slope from those used for axial fans in the current Regulation 327/2011. A specific set of N-values is given for axial jet fans.

Due to the very special and specific definition of energy efficiency adopted for jet fans, Eurovent suggests to completely separate axial jet fans and centrifugal jet fans from other fan types.

Mixed-flow fans

Eurovent offers the following solution:

As for mixed-flow fans, we suggest to keep the existing power sub ranges and equations, and to increase the N-value for installation types A and C, from N=50 in 2015 to N=52 in 2020, and to increase the N-value for installation types B and D, from N=62 in 2015 to N=64 in 2020.

Forward-curved fans

Eurovent offers the following solution:

As for forward-curved fans, we suggest to keep the existing power sub ranges and equations, and to increase the N-value for installation types A and C, from N=44 in 2015 to N=46 in 2020, and to increase the N-value for installation types B and D, from N=49 in 2015 to N=51 in 2020.

If you have any questions or remarks, please do not hesitate to contact our Team using the contact data mentioned on the top of the first page. Aside from the above-mentioned points, further, comparatively small-scale amendments, are going to be proposed in a subsequent Eurovent position document.

About Eurovent

Eurovent, the European Committee of HVAC&R Manufacturers, is the representative of Europe's major national associations in the industry of heating, ventilation, air conditioning and refrigeration. Based on objective and verifiable data, its 24 members from 18 European states represent more than 1000 companies, the majority small and medium-sized. In 2013, these accounted for a combined annual turnover of around 25bn euros and employed more than 120.000 people – making Eurovent one of the largest industry committees of its kind.

Eurovent's roots date back to 1958. Over the years, the Brussels-based umbrella association has become a well-respected and known stakeholder that builds bridges between companies it represents, legislators and standardisation bodies on a EU and international level. The association favours a level-playing field for the entire industry and strongly supports energy-efficient and environmental-friendly solutions. Eurovent holds in-depth relations with partner associations around the globe. It is a founding member of the ICARHMA network, supporter of REHVA and contributor to the EU's BUILD UP initiative.

Eurovent possesses two subunits. With Eurovent Certita Certification (ECC), it majority owns an independent certification company, which holds the ISO 45011 (17065) accreditation – fulfilling highest independency, reliability and integrity standards. Open to any company, it is known for its globally-recognised brand 'Eurovent Certified Performance'. Activities are complemented by Eurovent Market Intelligence (EMI), the association's second independent unit. Its Europe-wide data sets are frequently being used to support the development of EU regulation.

Members of Eurovent

Europe's major, national HVAC&R associations and their more than 1000 manufacturers



Corresponding Members

Manufacturers in European countries with no national HVAC&R association representing them



Independent Subunits

Organisations with own structures that guarantee a full independency from the Eurovent association



Enclosed:

Files linked within this documents can be found within the 'Attachment' section of Adobe Acrobat.