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Eurovent Position Paper providing additional clarification for the revision of Commission Regulation (EU) No 1253/2014

Scope: Non-Residential Ventilation Units and Residential Ventilation Units

In a nutshell

Further to the outcome of the first stakeholder meeting and subjects addressed by other stakeholder, Eurovent members provide additional feedback on the VU Regulation review. The comments concern the following aspects related to non-residential and residential Ventilation Units:

- Exclusion of Ventilation Units installed in Historic landmark buildings
- Definition of 'ventilation unit (VU)'
- Extending the scope of exemptions
- Test pressure for external leakage – NRVU with air flow of 250 – 1000 m3/h
- SFPINT bonus for controls
- Climate-related minimum requirements
- Defrosting
- Energy efficiency of filters
- Moisture recovery
- NRVUs including a heat exchanger and a heat pump for heat recovery
- Other amendments to the original Eurovent Position Paper

Background

On 28 March 2019, Eurovent submitted its consolidated Position Paper concerning non-residential and residential aspects of the revision of Commission Regulation (EU) No 1253/2014 to the review study team. After a thorough consideration of the outcome of the first stakeholder meeting and the additional input submitted by the stakeholders, the Eurovent Product Groups 'Air Handling Units' and 'Residential Air Handling Units' together with the Eurovent Product Group 'Air Filters' and the Eurovent Product Group 'Energy Recovery Components' decided to herewith provide additional feedback to the review study team and policy officer before the second stakeholder meeting.

Exclusion of Ventilation Units installed in Historic landmark buildings

A scope exclusion for ventilation units placed in historic landmark buildings in the revised Regulation (EU) 1253/2014 should be reconsidered.

There is a concern that a scope exclusion for ventilation units placed in historic landmark buildings might create a loophole that allows circumvention of the Ecodesign requirements in unjustified cases. To avoid this problem, a clear definition of such buildings would be required.

A review of the approach to historic landmark buildings at the national level reveals that all EU Member States seem to have a legal regime protecting historical buildings and monuments, including a register and a national conservation authority. Examples of relevant existing legislation in different EU Member States are presented in Annex I. At the national level then, there appears to be no ambiguity as to which buildings are historic landmarks and which are not.

Examples of regulatory exceptions for historic landmark buildings in EU legislation already exist. Article 4(2)(a) of Directive 2010/31/EU on the energy performance of buildings, for example, permits Members States not to apply the requirements laid out in Article 4(1) to "buildings officially protected as part of a designated environment or because of their special architectural or historical merit, in so far as compliance with certain minimum energy performance requirements would unacceptably alter their character or appearance". A similar exception could be introduced in 1253/2014.

Reference	Current text	Proposed amended text
Article 1(2)	This Regulation shall not apply to ventilation units which: [...]	This Regulation shall not apply to ventilation units which: [...] ***(?) are exclusively specified as operating in a building officially protected as part of a designated environment or because of its special architectural or historical merit, in so far as installation of a ventilation unit compliant with this Regulation would unacceptably alter the building's character or appearance;***

Definition of 'ventilation unit (VU)'

The current definition of a 'ventilation unit' includes the criterion that the product is intended to replace utilised air by outdoor air in a building or a part of a building. In its original Position Paper, Eurovent suggested an addition to Article 2 to clarify what is meant by 'utilised air'.

The text that was proposed to be added to the definition came directly from the European Commission's Technical Implementation Guide accompanying 1253/2014 and 1254/2014. However, to ensure that the definition makes clear that the measures apply only to ventilation units which replace air to enable human occupancy, Eurovent proposes that additional clarification should be integrated into the regulatory text.

Reference	Current text	Proposed amended text
Article 2(1)	'ventilation unit (VU)' means an electricity driven appliance equipped with at least one impeller, one motor and a casing and intended to replace utilised air by outdoor air in a building or a part of a building;	'ventilation unit (VU)' means an electricity driven appliance equipped with at least one impeller, one motor and a casing and intended to replace utilised air by outdoor air in a building or a part of a building; *'utilised air' means the polluted air due to the presence of human beings and their use of the building including emissions from materials, equipment, internal and external heat gains;* ***or air contaminated by any other source, replaced to enable prolonged stay of human beings.***

Ultimately, whatever the final text, the scope of the legislative act must be as precise as possible and leave no room for differing interpretations.

Extending the scope of exemptions

In addition to excluding products installed in Historic landmark buildings and improving the definition of Ventilation Units, Eurovent proposes to further extend the list of exclusions in Article 1 and include units that are obviously not used for ventilation related to human presence.

In the opinion of Eurovent, an unambiguous list of exemptions should include the following applications.

- Units for ventilation, cooling or heating machines or processes
  situated in spaces which are not normally occupied by people.
- Applications with excessive heat
  In applications where there is excessive heat present e.g. steel/cast mills or other applications with high extract air temperature levels there can be no or very small need for heat recovery. The total energy consumption might be higher when installing heat recovery systems in such an application. This due to added air pressure drop of the heat recovery system increasing the fan electrical consumption.
- Applications with high extract air humidity in industrial washing processes
  There are processes where the design amount of airflow needed for the washing process/protection of the building is much higher than the amount of fresh air needed for the human occupancy.
  The washing process can result in a very high humidity in the extract air resulting in a lot of condensate which may technically prevent the use of a heat exchanger with high efficiency. Process applications with high humidity in the extract air might for this reason have lower efficiency requirements or be excluded.
- Process applications with large amounts of particles in Extract air
  Extract air with a lot of particles may technically prevent the use of a heat exchanger with high efficiency due to clogging of the exchanger. Process applications with high amount of particles in the extract air might for this reason have lower efficiency requirements or be excluded.
- Applications with cold room temperatures
  E.g. fish farms. Normally fish farm requires low tempered rooms/areas with high humidity. Is this considered ventilation for human occupancy though people do occupy the area sometimes but not constantly. In these types of application it is often more important with cooling recovery. The same goes for sewage/treatment plants. Low tempered areas with few hours of human occupancy
- Rooftop units, which are an integral part of the EU Regulation 2016/2281.

Test pressure for external leakage – NRVU with air flow of 250 – 1000 m^3/h

The need to set requirements on air leakage rates is a mandatory item for review. Eurovent strongly supports the inclusion of air leakage rate limits in the revised 1253/2014 and drafted a comprehensive position on the subject in its original Position Paper.

Concerning external leakages for Non-Residential Ventilation Units, the original Eurovent proposal was to set limits at standardised pressures. Based on additional feedback from stakeholders, Eurovent considers that in certain cases limits are better set at design pressure as follows:

- For units with a flow rate over 1000 m^3/h, the external leakage limit is set at standardised pressures (-400 Pa, +700 Pa as per EN 1886).
- For units with the maximum flow rate in the range of 250 m^3/h to 1000 m^3/h and declared by the manufacturer as intended exclusively for use in non-residential application , the external

leakage limit is set at maximum pressure using the static pressure of the fan at maximum stated nominal air flow.

For Residential Ventilation Units i.e. with the maximum flow rate in the range of 250 m^3/h to 1000 m^3/h and declared by the manufacturer as intended exclusively for use in residential application, the leakage rating should be still performed according to EN 13141-7.

Eurovent is finalising a comprehensive Recommendation about internal leakages, which provides a detailed account of the problems posed by leakages and an extensive justification of the need to address them, which the review study team is advised to consult.

SFP_{INT} bonus for controls

The Eurovent proposal to introduce minimum requirements for control systems has distinct advantages over alternatives developed by other stakeholders proposing an SFP_{INT} bonus for controls.

The latter proposal would allow less efficient units to be placed on the market provided they have a compliant control system. The intent of the Eurovent proposal was to enable the revised 1253/2014 to make further efficiency gains by way of control system requirements, not to provide alternative ways to reach the same level of efficiency.

Climate-related minimum requirements

Other stakeholders have proposed heat recovery requirements which depend on the difference between outdoor air and extract air temperature under design conditions and a defined annual operating time with a specific evaluation method.

For Non-Residential Ventilation Units, Eurovent endorses this proposal, subject to its simplification. The heat recovery requirements should be determined based on fixed extract temperature and operating hours, and three to five clearly defined climate zones based on outdoor air temperature (not humidity).

For Residential Ventilation Units (normally mass-produced), Eurovent holds there should be no climate-related minimum requirements. Consideration of climate is justified only for energy labelling criteria.

Defrosting

Following the stakeholder discussion on the subject, Eurovent proposes

For Non-Residential Ventilation Units
to consider information requirements on the defrosting strategy, including:

- the heating effect to overcome defrosting
- the outdoor temperature range in which the supply air temperature and airflow remain in design values
- the required actions by the end user to overcome the effects of defrosting and keep the units working correctly

For Residential Ventilation Units
to include a simple information requirement in the Regulation and the addition of a symbol on the energy label, both of which should inform the end-user of whether the unit passed the cold climate test according to EN 13141-7, did not pass the test, or was not tested.

Energy efficiency of filters

Based on the Eurovent Certified filter data, members of the Eurovent Product Group 'Air Filters' studied the proposed relation between 'Media velocity' and 'Filter energy consumption'. The study led to a conclusion that an improved approach for evaluation of the filter energy efficiency might be developed. Members of PG-FIL Technical Subcommittee started to work on a new proposal. If a sufficient result is obtained, the proposal will be submitted shortly. Otherwise, the existing proposal to limit media velocity will be endorsed, yet with an amended limit for ePM10 and coarse filters of 0.5 m/s for all filters.

Moisture recovery

In its original Position Paper, Eurovent included a proposal to consider moisture recovery in the revised 1253/2014. During the first stakeholder meeting, the review study team asked for further clarification about the case studies supporting the position. Eurovent has drafted an extended clarifying paper for this purpose, that has been submitted to VHK as a separate Position Paper (PP-2019-10-25) on 10 October 2019.

NRVUs including a heat exchanger and a heat pump for heat recovery

Currently, Article 1(2)(g) excludes from the scope ventilation units which include a heat exchanger and a heat pump for heat recovery or allowing heat transfer or extraction being additional to that of the heat recovery system.

Eurovent maintains that this exclusion should be scrapped and NRVUs including a heat exchanger and a heat pump for heat recovery should be covered in the scope of Regulation 1253/2014. Minimum requirements for this kind of units should consider the energy impact of the heat pump and additional pressure drop over an evaporator and a condenser. Eurovent is developing a specific evaluation method for this purpose that will be available soon.

Other amendments to the original Eurovent Position Paper

In addition to the major comments addressed above, members of the Eurovent Product Group 'Air Handling Units' decided to provide editorial amendments to the original Position Paper of 28 March 2019 concerning Non-residential Ventilation Units. To keep the continuity, the amended text in the updated (entire) Position Paper was highlighted in green. The updated original position (PP - 2019-11-22) is attached to this Position Paper as a separate document.

Annex I

Examples of the approach to the definition and identification of historic landmark building in different EU Member States

Austria

The proportion of landmarked buildings for Austria is approx. 1.2 % relating to the building stock as a whole. Structural measures for these specific buildings require application of the national 'Federal act on the protection of monuments due to their historic, artistic or other cultural significance (Monument Protection Act – MPA)'. In addition to the usual approval procedure classified by fields of law (e.g. building and business regulations), landmarked buildings are settled by a separate approval procedure in terms of this Monument Protection Act. The Bundesdenkmalamt (Austrian Federal Monuments Office) that is based in Vienna is the competent institution and executive authority (https://bda.gv.at/ueber-uns/).

The legal basis is incorporated in the Federal Law No. 533/1923 DMSG – Monument Protection Act in version 2013 (www.ris.bka.gv.at/GeltendeFassung.wxe?Abfrage=Bundesnormen&Gesetzesnummer=10009184)

All measures, which may have an impact on the continued existence of a landmarked building represent a change in terms of Section 4 Subsection 1 DMSG. The implementation of such a change requires the approval by the Austrian Federal Monuments Office in accordance with Section 5 Subsection 1 DMSG. The procedure is introduced via application by the project applicant. Due to their differing characteristics as monuments, landmarked buildings are always treated in an object-specific fashion and to the greatest possible consensus in compliance with the applicable national building regulations (OIB (Austrian Institute of Construction Engineering) – guidelines as a basis for the federal building law). Furthermore, the guidelines issued by the Austrian Federal Monuments Office, "Standards of monument preservation", provide some detailed information on this matter. https://bda.gv.at/publikationen/standards-leitfaeden-richtlinien/standards-der-baudenkmalpflege/

Czech Republic

Concerning the historical buildings, there is the basic law No. 20/1987 on the State monument care in the Czech Republic. For example, the status of 'listed historical building' is defined there. For our subject the implementing decree 476/1992 about historical buildings and urban conservation areas is important.

There are different levels of protection. The building can be:

- Cultural monument (historical building)
- National cultural monument (historical building)
- Building in an urban conservation area

The status is clearly determined by the presence in the historical building register under https://www.pamatkovykatalog.cz/uskp .

In the list there is about 40.000 historical buildings in the whole republic. (In this number there are all realties including cemeteries, dams, big statues etc. So, the number of real buildings with ventilation system is less.)

Denmark

In Denmark, a relevant law in fore is LBK no 1088 of 29/08/2007 about 'Announcement of the Building Peace and Conservation Act' controlled by the Ministry of culture.

Ministry of culture also maintains a list of these buildings.
https://www.kulturarv.dk/fbb/fredningsliste.pdf

The law also describe that the building regulations contain special rules which, under certain conditions, exempt protected and conservation-worthy buildings from the stricter energy requirements of redevelopment. According to the Building regulation of 2018:

§278. Churches and additions which form part of a listed ancient monument are exempt from the provisions of ss. 274-282. (2) Listed buildings are exempt from the provisions of ss. 274-282 if observing the energy requirements in ss. 274-282 would be contrary to the architectural, cultural, historical or environmental values of the listed building. (3) Buildings worthy of preservation which are included in a local preservation planning regulation or a registered preservation declaration or buildings appointed in the municipal plan as being worthy of preservation under s. 19(1) of the Danish Act on Listed Buildings are also exempt from the provisions in ss. 274-282 if observation of the requirement would be contrary to the plan or appointment in question.

Finland

The conservation of cultural heritage (protection of buildings and surroundings) in Finland is taken care by municipalities that are responsible for planning: town plans, general/master plans and regional plans. The planning is based on the Land Use and Building Act. Whether a building, a part of a building or a surrounding is protected can be enquired from the municipal planner or building supervision authorities. Also, many municipalities publish their plans on their web sites. In addition to planning the buildings are protected by special laws such as concerning churches or protection of building heritage.

On all planning levels the plan can include requirements about protection of the works based on the cultural heritage's significance or properties of the works. The requirements of the plans are taken into account when issuing a building permit such as for building, action (a minor works) or demolishing a building. In repairing or changing of a protected building the requirements in the plan must be taken into account, too.

Thus, it can be easily determined if a building is protected.

Italy

Historical Buildings/Monuments are defined in the L.1089/39 and its following revisions.

The inventory of the Historical Buildings/Monuments is kept in each major city by the local unit of the 'Ministero dei Beni Culturali'

This inventory is lied down in the following legislation:

- L. 1089/39
- D.lgs n.42/04
- D.P.R. n. 31/2017

It can be online accessed at: http://vincoliinrete.beniculturali.it/VincoliInRete/vir/bene/ricercabeni

Every work on a historical building/monument is subjected to the preventive authorisation and to the further supervision of the local unit of the 'Ministero dei Beni Culturali', and this is according to the below listed laws:

- L. 1089/39
- D.lgs n.42/04

D.P.R. n. 31/2017

Poland

For any building, renovation, modification or demolition works a building permit must be obtained. This is an administrative decision strictly regulated by law. As a matter of principle, the building permit is issued by a local authority. During this process, it must be verified whether a building or object is listed in the register of the so-called Historical Monuments (including buildings). If so, sets of special standards for its protection and conservation must be applied during the works. The Inventory of Historical Monuments is kept by the National Heritage Board (a state agency under supervision of the Minister of Culture and National Heritage, https://www.nid.pl/en/). The Inventory is kept at local and country-wide level.

The Legal basis for the Inventory of Historical Monuments is lied down in the following legislation:

- Law of 23 July 2003 concerning Protection of Monuments (Journal of Laws 2003, No 162, pos. 1568 as amended)
- Regulation of 21 May 2011 of the Minister of Culture concerning the Inventory of Historical Monuments (Journal of Laws 2011, No 113, pos. 661).

Moreover, several references can be found in the Building Law of 7 July 1994 (Journal of Laws 1994, No 89, pos. 114 as amended)

So, a requester (architect, planner or installer) of the mandatory building permit is always aware if a building is listed.

Sweden

The relevant Swedish legislation contains the term Byggnadsminne, directly translated as 'building memory'. A building can be declared and listed as Byggnadsminne by the government or its county offices. The motivation shall be the cultural heritage values of the building or a complex of buildings. The listing doesn't necessarily imply that every modification is forbidden; every Byggnadsminne has its individual official conservation plan. Of course, modern ventilation ducts and large fan rooms may often not comply with the conservation plans. The legal act is Kulturmiljölagen (1988:950) and its subordinate acts.

On a local (municipality) basis whole areas are "labelled" in the municipal planning documents. Label 'q' indicates cultural heritage. Also in this case individual conservation plans tell us what we can do or not.

Finally, there is a general requirement in the building code to be careful with all buildings concerning their cultural and esthetical values. The local authorities can refuse to issue the building permit based on this requirement

Eurovent and transparency

When assessing position papers, are you aware whom you are dealing with?

Eurovent's structure rests upon democratic decision-making procedures between its members and their representatives. The more than 1.000 organisations within the Eurovent network count on us to represent their needs in a fair and transparent manner. Accordingly, we can answer policy makers' questions regarding our representativeness and decisions-making processes as follows:

1. Who receives which number of votes?
At Eurovent, the number of votes is never determined by organisation sizes, country sizes, or membership fee levels. SMEs and large multinationals receive the same number of votes within our technical working groups: 2 votes if belonging to a national Member Association, 1 vote if not. In our General Assembly and Eurovent Commission ('steering committee'), our national Member Associations receive two votes per country.

2. Who has the final decision-making power?
The Eurovent Commission acts as the association's 'steering committee'. It defines the overall association roadmap, makes decisions on horizontal topics, and mediates in case manufacturers cannot agree within technical working groups. The Commission consists of national Member Associations, receiving two votes per country independent from its size or economic weight.

3. How European is the association?
More than 90 per cent of manufacturers within Eurovent manufacture in and come from Europe. They employ around 150.000 people in Europe largely within the secondary sector. Our structure as an umbrella enables us to consolidate manufacturers' positions across the industry, ensuring a broad and credible representation.

4. How representative is the organisation?
Eurovent represents more than 1.000 companies of all sizes spread widely across 20+ European countries, which are treated equally. As each country receives the same number of votes, there is no 'leading' country. Our national Member Associations ensure a wide-ranging national outreach also to remote locations.

Check on us in the European Union Transparency Register under identification no. 89424237848-89.

We are Europe's Industry Association for Indoor Climate (HVAC), Process Cooling, and Food Cold Chain Technologies – thinking 'Beyond HVACR'

Eurovent is Europe's Industry Association for Indoor Climate (HVAC), Process Cooling, and Food Cold Chain Technologies. Its members from throughout Europe represent more than 1.000 companies, the majority small and medium-sized manufacturers. Based on objective and verifiable data, these account for a combined annual turnover of more than 30bn Euros, employing around 150.000 people within the association's geographic area. This makes Eurovent one of the largest cross-regional industry committees of its kind. The organisation's activities are based on highly valued democratic decision-making principles, ensuring a level playing field for the entire industry independent from organisation sizes or membership fees.

Eurovent's roots date back to 1958. Over the years, the Brussels-based organisation has become a well-respected and known stakeholder that builds bridges between the manufacturers it represents, associations, legislators and standardisation bodies on a national, regional and international level. While Eurovent strongly supports energy efficient and sustainable technologies, it advocates a holistic approach that also integrates health, life and work quality as well as safety aspects. 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 various EU and UN initiatives.

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