European Commission

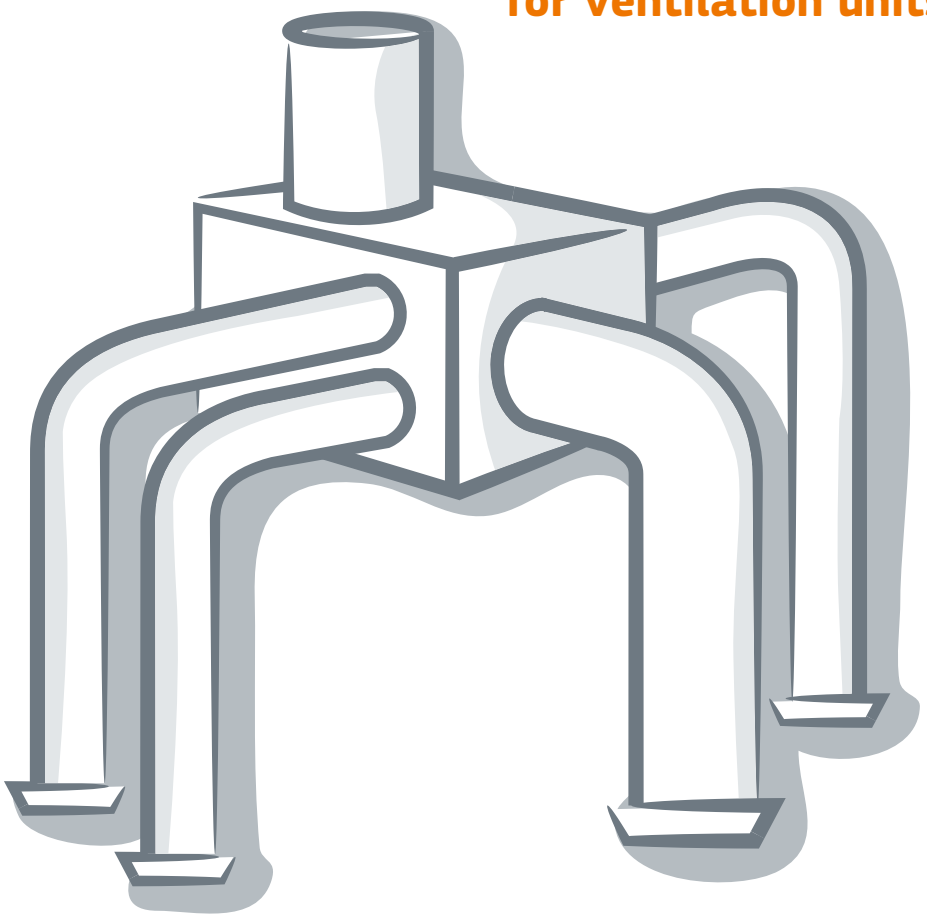
Guidelines accompanying

October 2016

Regulation (EU) No 1254/2014 with regard to **the energy labelling of residential ventilation units**

and

Regulation (EU) No 1253/2014 with regard to **ecodesign requirements for ventilation units**



Growth

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1 Introduction

The Ecodesign and Energy Labelling regulations for ventilation units (VUs) were published in July 2014 and have been applicable since 1 January 2016. These regulations establish minimum requirements and an energy labelling scheme for the products within its scope. This Technical Implementation Guide aims to summarise the information from the regulations in a dynamic hyperlinked format to give companies an introduction to the subject and answer their most common questions. It can also help a number of groups, including industry and public authorities, to transfer these requirements into practice.

This guide follows the structure of the regulations, starting with the scope. Then, it summarises Ecodesign and Energy Labelling requirements, stating the responsibilities for the manufacturers, suppliers and dealers. Finally, it closes with additional resources for further information. In case of any doubts concerning some concepts used, several "definition boxes" have been created throughout the guide indicating where in the regulations it is explained. Additionally, more information can be found in the FAQ at the end of the Guide.

The guidelines are intended to be used only for facilitating the implementation of the regulations. They are not intended to replace the regulations nor to provide legal "interpretation". The guidelines only reflect the opinion of the Commission services and are not legally binding. A finally binding legal Interpretation of EU legislation may only be provided by the European Court of Justice. The guidelines are without prejudice to the position the Commission might take should an issue arise in a procedure before the European Court of Justice.

The regulations

The Commission has published the following regulations concerning ventilation units:

- ✓ Commission Regulation (EU) No 1253/2014 of 7 July 2014 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for ventilation units
- ✓ Commission Delegated Regulation (EU) No 1254/2014 of 11 July 2014 supplementing Directive 2010/30/UC of the European Parliament and of the Council with regard to energy labelling of residential ventilation units

Revision

The Ecodesign regulation shall be reviewed by the European Commission (EC) no later than 1 January 2020[1] due to expected technological progress. The key topics to be included in this review are:

- ✓ Possible extension of the regulation scope to cover unidirectional units with electric power input <30W and bidirectional units with a total electric power input of <30W per air stream for the fans,
- ✓ Possible need to modify the verification tolerances set out in Annex VI,
- ✓ Possible need to take into account the effects of low-energy-consuming filters on efficiency,
- ✓ Possible need to develop an additional tier with further-tightened Ecodesign requirements.

The **energy labelling** regulation shall be reviewed by the European Commission (EC) no later than 1 January 2020 due to expected technological progress. The key topics to be included in this review are:

- ✓ Possible inclusion of other VUs, such as non-residential units with total electric power input <30W,
- ✓ Inclusion of the specific energy consumption calculation and classes for demand controlled unidirectional (UVUs) and bidirectional (BVUs) ventilation units.

[1] An anticipated review (due no later than 1 January 2017) solely dedicated to the assessment of the need to set requirements on air leakage rates, is also foreseen.

2 Scope

The scope of the regulations on Energy Labelling and Ecodesign are slightly different. Figure 1 synthesises the application of these regulations on ventilation (ducted or non-ducted) units. There are basically two types of requirements that ventilation units, within the scope, must comply with.

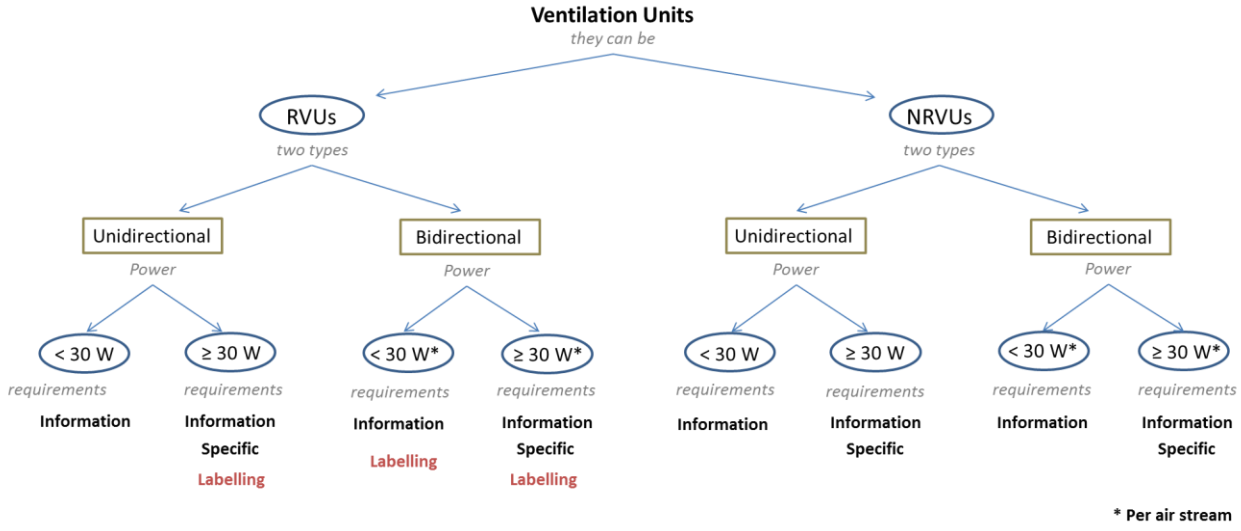
The first type establishes **specific** requirements for ventilation units. It approaches concepts like specific energy consumption, sound power level, thermal and fan efficiencies, etc. The second type sets **information** requirements. It lists what kind of information manufacturers have to provide, and in some cases how to provide it.

Ecodesign regulation covers specific requirements for both residential ventilation units (RVUs) and non-residential ventilation units (NRVUs) with an electric power input equal or above 30W, as well as information requirements for all RVUs and NRVUs. **Energy Labelling** regulation, on the other hand, only sets its labelling requirements for unidirectional RVUs equal or above 30W and bidirectional RVUs.

Table 1 – Definitions for different type of ventilation units

Concept	Where in the Regulation?
Ventilation unit (VU)	Regulation 1253/2014 :: Article 2 :: (1)
Residential ventilation unit (RVU)	Regulation 1253/2014 :: Article 2 :: (2)
Non-residential ventilation unit (NRVU)	Regulation 1253/2014 :: Article 2 :: (3)
Unidirectional ventilation units (UVU)	Regulation 1253/2014 :: Article 2 :: (5)
Bidirectional ventilation units (BVU)	Regulation 1253/2014 :: Article 2 :: (6)
Ducted unit	Regulation 1253/2014 :: Annex I :: 1.(22)
Non-ducted unit	Regulation 1253/2014 :: Annex I :: 1.(23)

Figure 1 – Scope of Ecodesign and Energy Labelling with regard to ventilation units



Within the abovementioned ventilation units' scope, there are certain ventilation units for which Ecodesign and Labelling regulations do not apply. These are practically the same for both regulations, with one difference. Table 2 identifies special ventilation units where regulations are not applicable.

Table 2 – Ventilation units out of scope

Regulation	Ventilation units out of scope
Ecodesign (only)	VUs that are axial or centrifugal fans only equipped with a housing, per Regulation (EU) 327/2011[2].
Both Ecodesign and Labelling	VUs that are exclusively specified as operating in a **potentially explosive atmosphere** as defined in Directive 94/9/EC[3].
	VUs that are exclusively specified as operating for **emergency use** for short periods of time, and that comply with the basic requirements for construction works with regard to safety in case of fire as set out in Regulation (EU) No 305/2011[4].
	VUs that are exclusively specified as **operating**: • Where operating temperatures of the air being moved exceed 100 °C • Where the operating ambient temperature for the motor driving the fan, if located outside the air stream, exceeds 65 °C • Where the temperature of the air being moved or the operating ambient temperature for the motor, if located outside the air stream, are lower than – 40 °C • Where the supply voltage exceeds 1 000 V AC or 1 500 V DC • In toxic, highly corrosive or flammable environments, or in environments with abrasive substances
	VUs that **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, except heat transfer for frost protection or defrosting
	VUs that are classified as **range hoods,** covered by Regulation (EU) 65/2014[5].

[2] Commission Regulation (EU) No 327/2011 of 30 March 2011 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for fans driven by motors with an electric input power between 125 W and 500 kW

[3] Directive 94/9/EC of the European Parliament and of the Council of 23 March 1994 on the approximation of the laws of the Member States concerning equipment and protective systems intended for use in potentially explosive atmospheres (OJ L 100, 19.4.1994, p. 1).

[4] Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC (OJ L 88, 4.4.2011, p. 5).

[5] Commission Delegated Regulation (EU) No 65/2014 of 1 October 2013 supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to the energy labelling of domestic ovens and range hoods (OJ L 29, 31.1.2014, p. 1).

3 Ecodesign Requirements

3.1 Stages

Ecodesign specific requirements implementation has two stages:

- Stage 1 - from 1 January 2016,
- Stage 2 - from 1 January 2018.

Ecodesign information requirements are mandatory since 1 January 2016 and will remain mandatory until they are revised in the future.

3.2 Residential ventilation units

3.2.1 Specific Requirements

Table 3 specifies the specific requirements that RVUs must comply with, according to Annex II of Regulation 1253/2014.

Table 3 - Specific requirements for RVUs per stage

Stage 1	Stage 2
SEC[a] **≤ 0** kWh/ (m^2.a)	**SEC ≤ -20** kWh/ (m^2.a)
L_{WA}[b] **≤ 45** db	L_{WA} **≤ 40** db
All ventilation units, except dual use units, shall be equipped with a multi-speed drive or variable speed drive	
All bidirectional ventilation units shall have a thermal by-pass facility	
	VUs with a filter shall be equipped with a visual filter change warning signal

Notes:

a) The specific energy consumption (SEC) calculation, for average climate, is given in Annex VIII of Regulation 1253/2014, where the equation and the calculation parameters are shown.

b) The sound power level (L_{WA}) concerns non-ducted units (including ventilation units intended to be equipped with one duct connection on either the supply or extract air side).

Table 4 - Concepts in the regulation regarding specific requirements for RVUs

Concept	Where in the Regulation?
Specific energy consumption (SEC)	Regulation 1253/2014 :: Annex I :: 1.(1)
Sound power level (L_{WA})	Regulation 1253/2014 :: Annex I :: 1.(2)
Multi-speed drive	Regulation 1253/2014 :: Annex I :: 1.(3)
Variable speed drive (VSD)	Regulation 1253/2014 :: Annex I :: 1.(4)
Thermal by-pass facility	Regulation 1253/2014 :: Annex I :: 1.(35)

3.2.2 *Information Requirements*

From 1 January 2016, the product information listed in Annex IV of Regulation 1253/2014 shall be provided and available in:

- the technical documentation of the RVU,
- free access websites of:
  - manufacturers,
  - manufacturers´ authorised representatives,
  - importers.

Moreover, for the purpose of efficient materials recycling, manufacturers shall make available (except for models of which less than 5 units per year are produced) detailed instructions, identifying the required tools for the manual dis-assembly of permanent magnet motors, and of electronics parts (printed wiring boards/ printed circuit boards and displays > 10 g or > 10 cm2), batteries and larger plastic parts (> 100 g).

Table 5 - Concepts in the regulation regarding information requirements

Concept	Where in the Regulation?
technical documentation	Regulation 1253/2014 :: Article 5 :: 2.

3.2.3 *Verification for Market Surveillance*

For the purposes of checking conformity with the requirements, Member State authorities shall proceed as indicated in Annex VI of Regulation 1253/2014.

Figure 2 - Verification for market surveillance of RVUs

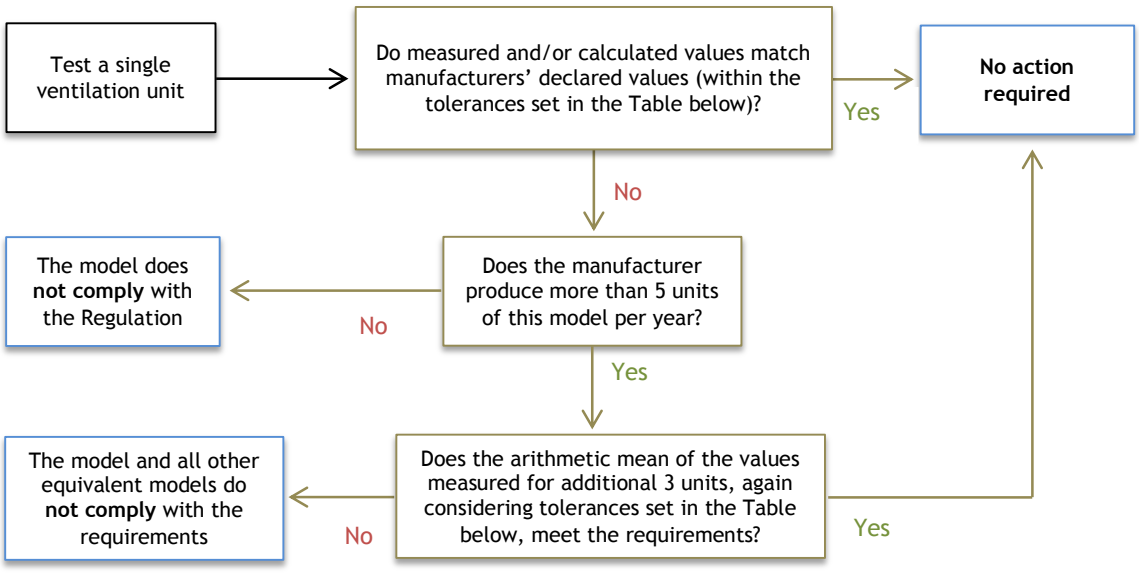


Table 6 - Verification tolerances for RVUs

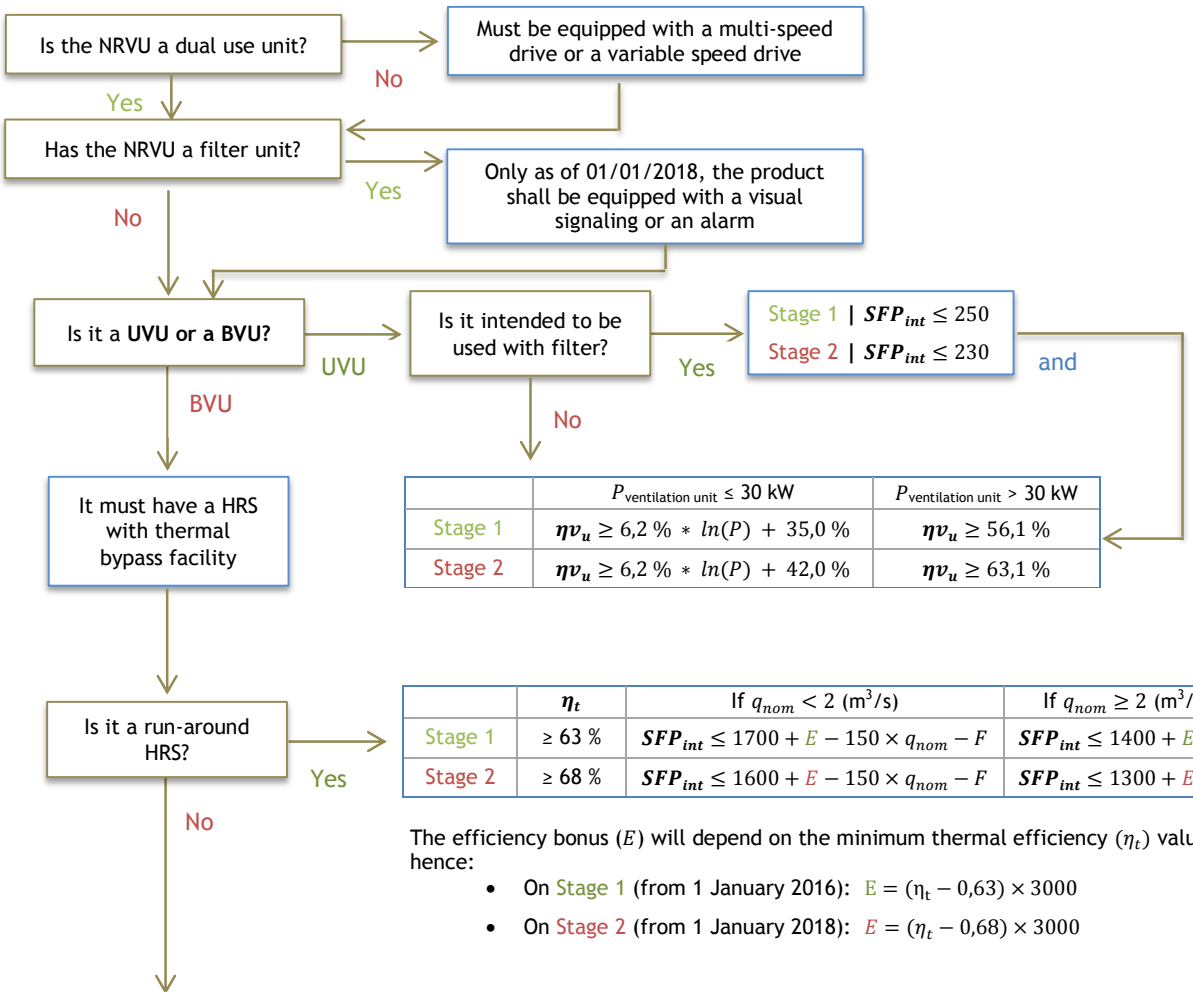
Parameters	Verification tolerances
Specific Power Input (SPI) (Definition in Regulation 1253/2014 :: Annex I :: 1.(13))	$Value_{measured} \leq 1{,}07 \times Value_{\max\_declared}$
Thermal Efficiency (Definition in Regulation 1253/2014 :: Annex I :: 1.(6))	$Value_{measured} \geq 0{,}93 \times Value_{\min\_declared}$
Sound Power Level	$Value_{measured} \leq 2dB + Value_{\max\_declared}$

3.3 Non-residential ventilation units

3.3.1 Specific Requirements

Annex III of Regulation 1253/2014 sets the requirements for NRVUs (unidirectional and bidirectional units) regarding the maximum internal specific fan power (SFP_{int}), minimum fan efficiency (ηv_u), and minimum thermal efficiency (η_t).

Figure 3 - Specific requirements for NRVUs



	$P_{\text{ventilation unit}} \leq 30$ kW	$P_{\text{ventilation unit}} > 30$ kW
Stage 1	$\eta v_u \geq 6{,}2\,\% * ln(P) + 35{,}0\,\%$	$\eta v_u \geq 56{,}1\,\%$
Stage 2	$\eta v_u \geq 6{,}2\,\% * ln(P) + 42{,}0\,\%$	$\eta v_u \geq 63{,}1\,\%$

	η_t	If $q_{nom} < 2$ (m³/s)	If $q_{nom} \geq 2$ (m³/s)
Stage 1	≥ 63 %	$SFP_{int} \leq 1700 + E - 150 \times q_{nom} - F$	$SFP_{int} \leq 1400 + E - F$
Stage 2	≥ 68 %	$SFP_{int} \leq 1600 + E - 150 \times q_{nom} - F$	$SFP_{int} \leq 1300 + E - F$

The efficiency bonus (E) will depend on the minimum thermal efficiency (η_t) value, hence:

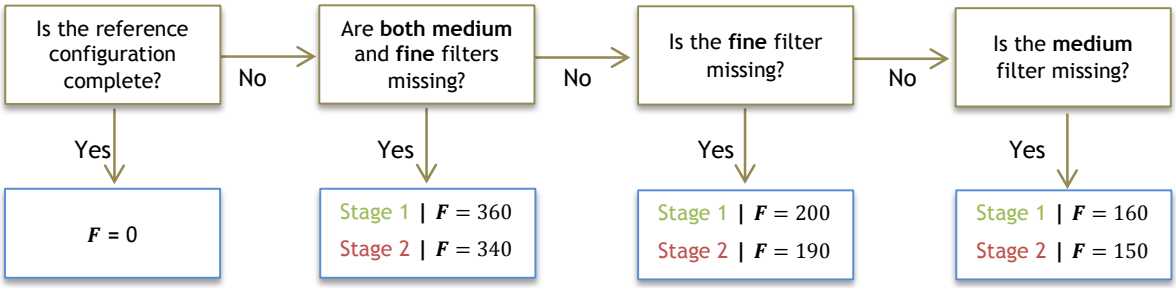
- On Stage 1 (from 1 January 2016): $E = (\eta_t - 0{,}63) \times 3000$
- On Stage 2 (from 1 January 2018): $E = (\eta_t - 0{,}68) \times 3000$

	η_t	If $q_{nom} < 2$ (m³/s)	If $q_{nom} \geq 2$ (m³/s)
Stage 1	≥ 67 %	$SFP_{int} \leq 1200 + E - 150 \times q_{nom} - F$	$SFP_{int} \leq 900 + E - F$
Stage 2	≥ 73 %	$SFP_{int} \leq 1100 + E - 150 \times q_{nom} - F$	$SFP_{int} \leq 800 + E - F$

The efficiency bonus (E) will depend on the minimum thermal efficiency (η_t) value, hence:

- On Stage 1 (from 1 January 2016): $\mathrm{E} = (\eta_t - 0{,}67) \times 3000$
- On Stage 2 (from 1 January 2018): $E = (\eta_t - 0{,}73) \times 3000$

In the case of BVUs the filter control factor (F), according to the ventilation unit´s configuration, is given by the following:



A **filter** can either be classified as a fine filter or a medium filter. In order to determine this, one must follow specific test conditions in order to measure and calculate the average efficiency of the air filter being tested.

Table 7 - Test conditions to measure the average efficiency of the air filter

Test Conditions	
Air flow	0,944 (m^3/s)
Filter face	592 x 592 (mm)
Installation frame	610 x 610 (mm)
Face velocity	2,7 m/s

After proper preparation, calibration and checking the airstream for uniformity, **initial filter efficiency** and **pressure drop** of the **clean filter** are **measured**.

The filter is progressively loaded with appropriate dust up to a **final** filter **pressure** drop of **450 Pa**.

At first, 30 g is loaded in the dust generator. Subsequently there must be **at least 4 equidistant dust loading steps** before reaching the final pressure.

The dust is fed to the **filter** at a **concentration** of **70 mg/m^3**.

Filter efficiency is measured with **droplets** of a test aerosol (DEHS - DiEthylHexylSebacate) in the **size** range **0,2 to 3 µm**, at a **rate** of about **0,39 dm^3/s** (1,4 m^3/h).

Particles are counted 13 times, successively upstream and downstream of the filter at minimum 20 seconds, with an optical particle counter (OPC).

Incremental filter efficiency and pressure drop values are established. Average filter efficiency over the test for the various particle size classes is calculated. Once we have these results we classify the filter as such:

Table 8 - Classification of the minimum and average efficiency of the filters

Filter	Average efficiency for particle size 0,4 µm	Minimum Efficiency
Fine	$\eta_{avg} \geq 80\%$	$\eta_{min} \geq 35\%$
Medium	$\eta_{avg} \geq 40\%$	-

From 1 January 2018 (Stage 2), if a filter unit is part of the configuration, the product shall be equipped with a visual signalling or an alarm in the control system which shall be activated if the filter pressure drop exceeds the maximum allowable final pressure drop.

Table 9 - Concepts in the regulation regarding specific requirements for NRVUs

Concept	Where in the Regulation?
HRS (heat recovery system)	Regulation 1253/2014 :: Annex I :: 1.(5)
run-around HRS	Regulation 1253/2014 :: Annex I :: 2.(14)
SFP_{int} (internal specific fan power)	Regulation 1253/2014 :: Annex I :: 2.(12)
fan efficiency	Regulation 1253/2014 :: Annex I :: 2.(2)
thermal efficiency (η_t)	Regulation 1253/2014 :: Annex I :: 2.(11)
reference configurations	Regulation 1253/2014 :: Annex I :: 2.(3) and Regulation 1253/2014 :: Annex I :: 2.(4)

3.3.2 Information Requirements

From 1 January 2016, the product information listed in Annex V of Regulation 1253/2014 shall be provided and available in:

- the technical documentation of the NRVU,
- free access websites of:
  - manufacturers,
  - manufacturers´ authorised representatives,
  - importers.

Moreover, for the purpose of efficient materials recycling, manufacturers shall make available (except for models of which less than 5 units per year are produced) detailed instructions, identifying the required tools for the manual dis-assembly of permanent magnet motors, and of electronics parts (printed wiring boards/ printed circuit boards and displays > 10 g or > 10 cm2), batteries and larger plastic parts (> 100 g).

3.3.3 Verification for Market Surveillance

For the purposes of checking conformity with the requirements, Member State authorities shall proceed as indicated in Annex VI of Regulation 1253/2014:

Figure 4 - Verification for market surveillance of NRVUs

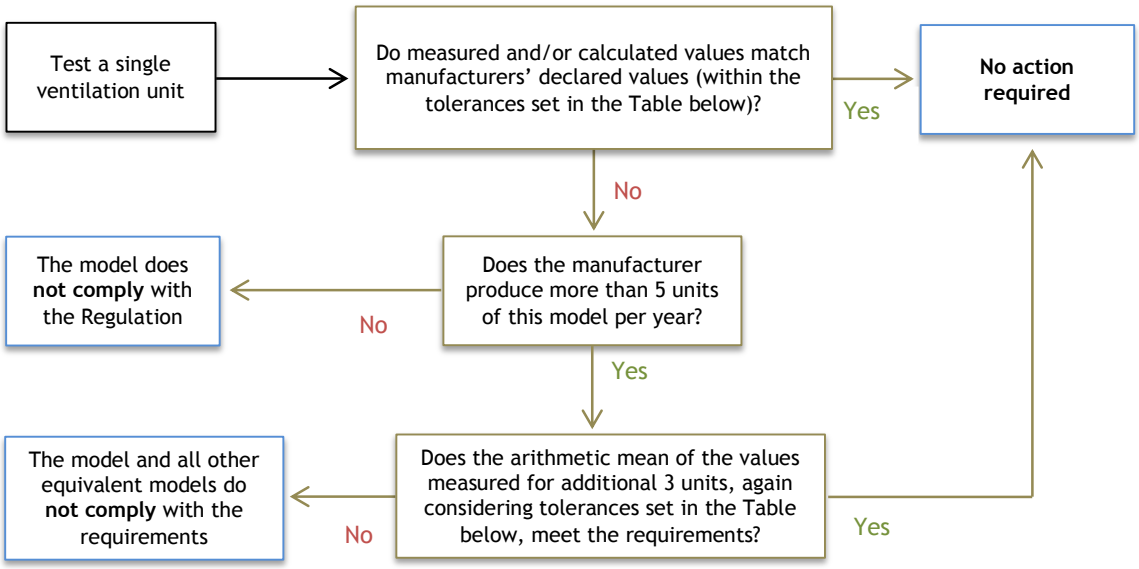


Table 10 - Verification tolerances for NRVUs

Parameters	Verification tolerances
Thermal Efficiency	$Value_{measured} \geq 0{,}93 \times Value_{\min\_declared}$
SFP_{int}	$Value_{measured} \leq 1{,}07 \times Value_{\max\_declared}$
Fan efficiency (UVU)	$Value_{measured} \geq 0{,}93 \times Value_{\min\_declared}$
Sound Power Level	$Value_{measured} \leq 5dB + Value_{\max\_declared}$

4 Energy Labelling

The Energy Labelling regulation establishes the information that suppliers and dealers are responsible for providing to the end-user, as well as a detailed description of the design and content of the energy label required for residential ventilation units.

4.1 Suppliers information

Article 3 of Regulation 1254/2014 sets that from 1 January 2016 the following information for residential ventilation units placed in the market must be provided by suppliers:

SUPPLIERS must make available…

- …at least **in the packaging:** Printed Label; Product Fiche
- …to **dealers:** Electronic Label; Electronic Product Fiche
- …to **any market** Instructions for use of the unit
- …on request, to **Member State Authorities** and **European Commission** Technical Documentation

Additionally, the specific energy consumption (SEC) class, for a specific model of residential ventilation unit, must be provided by suppliers in:

- Any advertisement of that model that discloses energy- or price-related information,
- Any technical promotional material for that model that describes its specific technical parameters.

The label design is set in Annex III of Regulation 1254/2014. The actual measures, spacing, and formatting of the label and its content are defined in Regulation 1254/2014 :: Annex III :: 3.

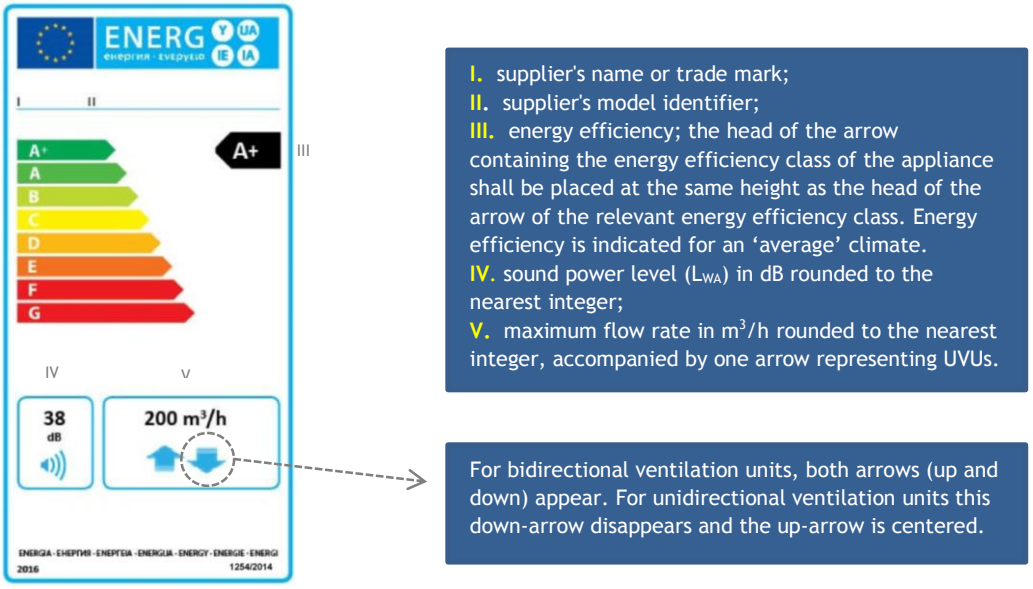


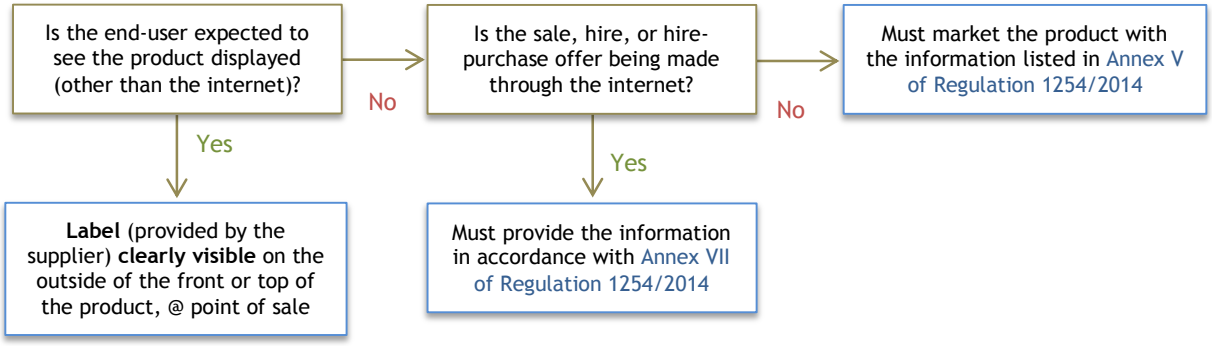
Table 11 - Concepts introduced regarding energy labelling

Concept	Where in the Regulation?
Product Fiche	Regulation 1254/2014 :: Annex IV
Technical Documentation	Regulation 1254/2014 :: Annex V
SEC class	Regulation 1254/2014 :: Annex II
SEC calculation	Regulation 1254/2014 :: Annex VIII :: 1.
Maximum flow rate	Regulation 1254/2014 :: Article 2 :: (3)

4.2 Dealers

Article 4 of Regulation 1254/2014 sets that **dealers** must ensure the following information is made available according to the specific situation:

Figure 5 - Information provided by dealers



Additionally, specific energy consumption's (SEC) class, for a specific model of residential ventilation units, must be provided by suppliers in:

- any advertisement of that model that discloses energy-related or price information,
- any technical promotional material, concerning that model, that describes its specific technical parameters.

4.3 Verification for Market Surveillance

For the purposes of checking conformity with the requirements, Member State authorities shall proceed as indicated in Annex IX of Regulation 1254/2014.

Figure 6 - Verification for market surveillance regarding the manufacturer's declared values

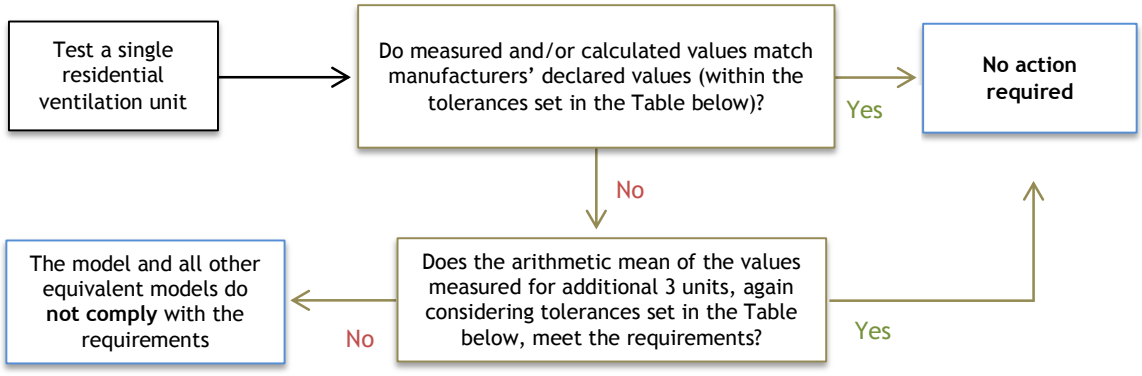


Table 12 - Verification tolerances

Parameters	Verification tolerances
Specific Power Input (SPI)	$Value_{measured} \leq 1{,}07 \times Value_{\max\_declared}$
Thermal Efficiency	$Value_{measured} \geq 0{,}93 \times Value_{\min\_declared}$
Sound Power Level	$Value_{measured} \leq 2dB + Value_{\max\_declared}$

5 FAQ section

FREQUENTLY ASKED QUESTIONS

TO

COMMISSION REGULATION (EU) No 1253/2014

of 7 July 2014

Implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to Ecodesign requirements for ventilation units (Text with EEA relevance)

And

DELEGATED COMMISSION REGULATION (EU) No 1254/2014

of 11 July 2014

Supplementing Directive 2010/30/EU of the European Parliament and of the Council with regard to energy labelling of residential ventilation units

Please note that further Q&As on ventilation units are present in the *Frequently Asked Questions (FAQ) on the Ecodesign Directive and its Implementing Regulations*[6], pp. 73 onwards.

5.1 QUESTIONS REGARDING PLACING A PRODUCT ON THE MARKET VS PUTTING A PRODUCT INTO SERVICE

1. What does it mean to place a product on the market? How does it differ from putting it into service?

For the definitions of "placing on the market" and "putting into service", please refer to the Ecodesign Directive 2009/125 in general and, in particular, Article 2. Further explanations can be found in the "Blue Guide"[7], and specifically under sections 2.2 and 2.3, according to which placing a product on the market refers to making it available for the first time on the Union market. The operation is reserved either for a manufacturer or an importer (i.e. the manufacturer and the importer are the only economic operators who place products on the market). A product is made available on the market when supplied for distribution, consumption or use on the Union market in the course of a commercial activity, whether in return for payment or free of charge.

For more information regarding the difference between "placing on the market" and "putting into service," please refer to the *Frequently Asked Questions (FAQ) on the Ecodesign Directive and its Implementing Regulations*[8], question 1, pg. 3.

5.2 QUESTIONS REGARDING PLACING A PRODUCT ON THE MARKET – SPECIFIC CASES

2. Would a company be able to manufacture non-compliant products after 01/01/2016, if an order is received before 31/12/2015? What happens to non-compliant products which fail after 01/01/2016, but are still within their warranty period? Does Regulation 1253/2014 apply to ventilation units to be installed in buildings under construction at the time this Regulation entered into force?

As a general rule, it is the moment when a product is placed on the market which determines the applicable legal requirements. Products placed on the market after the date an Ecodesign Regulation becomes applicable (1253/2014, in our specific case) must comply with its provisions. Moreover, any private contract needs to respect the applicable legal framework. The placing on the market takes place when the product is supplied for distribution, consumption or use and it is in any event necessary that the product has been manufactured and its conformity has been assessed. A contract which has been signed to manufacture a particular product that does not yet exist cannot be construed to be 'placing on the market'.

Therefore, Regulation 1253/2014 does not exclude from its scope products in the situations described.

5.3 QUESTIONS REGARDING "SEPARATE DELIVERY" AND CE-MARKING

[6] Available at http://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficient-products
[7] Available at http://ec.europa.eu/DocsRoom/documents/11502
[8] Available at http://ec.europa.eu/energy/en/topics/energy-efficiency/energy-efficient-products

3. **Who is responsible for the CE marking when the ventilation unit is delivered without a control system: the manufacturer of the ventilation unit, or the individual who connects the control system? How should an RVU sold without a control system be labelled? How should one deal with separately-delivered components and/or installed units?**

It is not entirely clear whether "control system" refers to the "indoor climate control system" or the "motor control system." For example, as to RVUs the first is related to the choice of the control factor (Annex IV-1-n of Regulation 1253/2014), whereas the second is related to the declared type of drive (Annex IV-1-e (for RVUs) or Annex V-1-d (for NRVUs)). Specific categories of drives are explicitly addressed by the Ecodesign Regulation 1253/2014; as a result of the provisions laid down in Annex II for RVUs and Annex III for NRVUs, ventilation units must be equipped with a multi-speed drive or variable speed drive. In the case where variable speed drive (VSD) is opted for, definition 4 of Annex I (of Regulation 1253/2014) states that the VSD can be a separate delivery. With regard to the "indoor climate control systems," specifically for RVUs, several options are possible (e.g. "manual control", "demand control", etc.).

If a ventilation unit is placed on the market without the "indoor climate control system" or the "motor control system," the manufacturer must provide information clarifying which system needs to be installed on the ventilation unit to ensure that it complies with requirements when it is put into service.

The manufacturer has to CE-mark the product to verify that it has complied with all regulatory obligations. The installer is responsible for ensuring that the product is put into service in accordance with the information provided by the manufacturer (pursuant to Annex IV or V). Suppliers also must supply an energy label when placing residential ventilation units on the market, even if the units do not include indoor climate control system(s). In such cases, the determination of the label class needs to take into account the information provided by the manufacturer pursuant to Annex IV-1-n of the Ecodesign Regulation.

For cases in which other components might be delivered separately, an approach similar to the abovementioned situation can be adopted.

4. **Allegedly, there are some countries outside of the EU which require compliance with some EU directives (e.g. the Machinery directive) for products to be sold on their markets. Some ventilation units can be within the scope of the Machinery directive, but are also impacted by a specific Ecodesign Regulation (Regulation 1253/2014). Therefore, to affix the CE mark, the manufacturer would be required to assess compliance of the product with both directives[9]. When selling the product outside of the EU, these manufacturers want to know if they can affix a kind of "partial CE mark," i.e. a CE mark only showing compliance with the Machinery directive (and not with Ecodesign Regulation 1253/2014). Is this possible?**

The affixing of a CE marking to a product placed on a non-EU/EEA market does not change its meaning, which is to indicate conformity with all requirements laid down by the EU harmonisation legislation in question.

[9] To simplify, this question is posed without considering other EU directives which can impact these products

5.4 QUESTIONS REGARDING ARTICLE 1 - SUBJECT MATTER AND SCOPE (Regulation 1253/2014)

5. Under what operating conditions, such as flow/pressure difference, is the electric power input determined?

The electric power input is measured at the declared maximum flowrate, and at the pressure difference related to the maximum flowrate. For BVUs, the total electric power input is the sum of the electric power input measured per individual fan, including controllers (but without frost protection). Accordingly, the '30W per air stream', cf. Article 1 (b), means that Regulation 1253/2014 shall not apply to BVUs with a total electric power input of less than 60 W, except for information requirements. The limit of '30W per air stream' also applies to alternating BVUs. *For maximum flowrate, see the question: 'What is the flowrate (maximum, reference or nominal) for an alternating BVU?'*

Electric power input is:

- **Not** power in the Best Efficiency Point (BEP) according EU 327/2011 (Fan Regulation);
- **Not** maximum power written on the name plate of the fan within the unit; and
- **Not** always the same as the power on the name plate of the entire unit, as this may also include the power of additional components like pre- and after-heater, etc.

Please note that the scope of the energy labelling Regulation 1254/2014 does not exclude BVUs with electric power input less than 30 W per air stream. See *Frequently Asked Questions (FAQ) on the Ecodesign Directive and its Implementing Regulations*[4], pp. 75-77.

6. What is meant by 'toxic, highly corrosive or flammable or in environments with abrasive substances', as in Article 1 (f), (v)?

- *'Toxic, highly corrosive or flammable'* refers to those industrial environments where the handling of toxic, highly corrosive or flammable gases or vapours, as defined in Regulation (EC) No 1272/2008[10] (CLP Regulation) and its adaptations, takes place. To this extent, and in line with the terminology of the CLP Regulation, the term "toxic" refers to a substance or mixture's classification as a health hazard (Part. 3 Annex I CLP Regulation), and "highly corrosive" refers to the hazard classification of a substance or a mixture as corrosive to metals (Section 2.16 Annex I CLP Regulation).
- *'Environments with abrasive substances'* can be considered to be in line with the FAQ for Regulation (EU) No 327/2011.

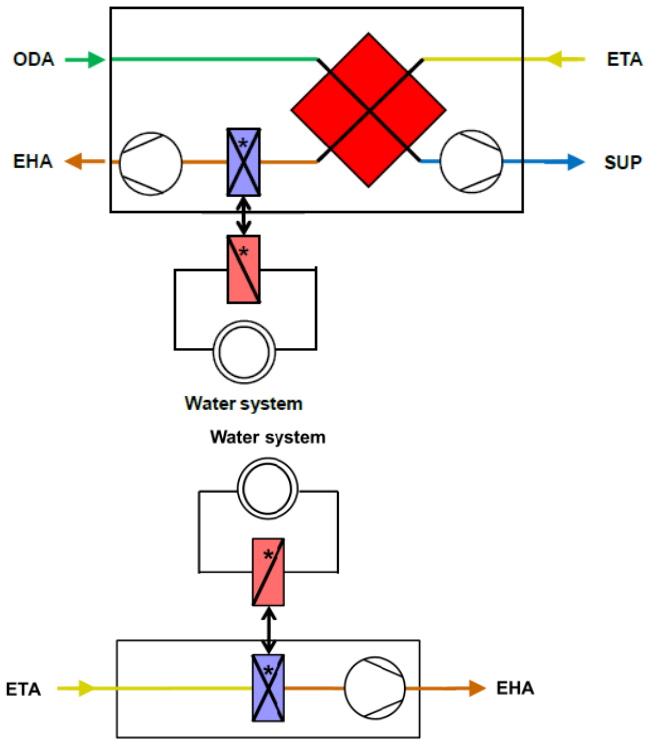
7. How should one deal with units combining a variety of functions that may be regulated by differing Ecodesign Regulations?

For NRVUs, a distinction is made between ventilation components and additional non-ventilation components. Additional non-ventilation components can include heating or cooling coils that are not part of the reference configuration, and are therefore corrected for in the calculation of SFP_{int}. Ventilation components for a BVU include an HRS, among others. If this is combined with a heat pump for heat recovery, the BVU does **not** fall under Regulation 1253/2014. However, if an air-to-water heat pump uses exhaust air from the ventilation unit by using a coil (which can be considered an additional

[10] OJ L 353, 31.12.2008, p. 1.

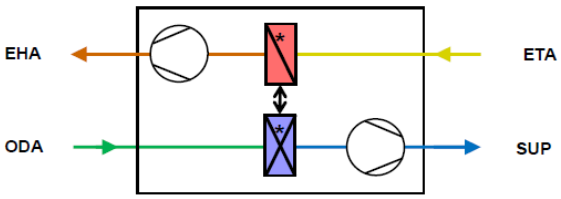
non-ventilation component not affecting heat recovery), the ventilation unit falls under Regulation 1253/2014. The air-to-water heat pump must comply with the relevant Ecodesign Regulation. Examples of such products are shown in Figure 7.

Figure 7 - Examples of NRVUs within scope that use a coil (additional non-ventilation component not affecting heat recovery) to connect to an air-to-water heat pump



With regard to RVUs, BVUs equipped with a heat pump for heat recovery only (the same as 'heat transfer being additional to heat recovery') do **not** fall under Regulation 1253/2014. Figure 8 shows an example of such a product.

Figure 8 - Example of BVU outside scope with a heat pump for heat recovery only (same as 'heat transfer being additional to heat recovery')



RVU multifunctional products/systems, such as UVUs including exhaust air-to-water heat pumps, do **not** fall under Regulation 1253/2014 **as long as** the component(s) that constitute a ventilation unit are integrated into the rest of the system and are not commercialised/delivered separately. For example, if the ventilation unit is delivered separately (able to operate) and it is the responsibility of the end user to (potentially) integrate it with the heat pump, this ventilation unit will be compliant with Regulation 1253/2014.

The unit's main function may be heating or cooling (or water heater function). If this is the case, the product must fulfil other relevant Ecodesign Regulations.

8. Are professional range hoods within the scope of Regulation 1253/2014?

Professional range hoods are **not** within the scope of Regulation 1253/2014.

5.5 QUESTIONS REGARDING ARTICLE 2 - DEFINITIONS (Regulation 1253/2014)

9. We manufacture VUs for marine/cruise ship applications. Are they within scope?

Article 2 (1) defines 'ventilation unit (VU)' as an electricity-driven appliance equipped with at least one impeller, one motor and a casing and intended to replace utilized air by outdoor air **in a building or a part of a building**.

Article 1 (3) of the Ecodesign Directive 2009/125/EC stipulates that the Directive does not apply to means of transport for persons or goods.

Therefore, an implementing Regulation does **not** apply to products that are designed **only** for use in marine ships. However, if the same product is designed for use in both a means of transport for persons or goods **and** for use in a building, it must comply with all relevant requirements of the Ecodesign measure (bearing in mind any exclusions from the scope of the Regulation itself).

10. What is meant by 'to replace utilised air by outdoor air'?

Article 2 (1) defines 'ventilation unit (VU)' as 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;

In a building (or part of a building) designed for human occupancy, the purpose of the ventilation unit is to replace utilised air with outdoor air. In this respect, utilised air is air polluted due to the presence of human beings and their use of the building, including emissions from materials, equipment, and internal and external heat gains. The Regulation does **not** apply to a product intended to be used in a building (or part of a building) that is **not** designed for human occupancy, or to a product that is **not** intended to replace utilised air (as specified above) as its primary function. If the **same** product is also designed to **only** replace utilised air (as specified above), it must comply with all relevant requirements of the Ecodesign measure (bearing in mind any exclusions from the scope of the Regulation itself).

An example of an application where the Regulation should not apply is that of data centres.

11. Are products designed for 100% recirculation considered ventilation units?

If the product is **not** designed for replacing utilised air with outdoor air, it is **not** a ventilation unit, unless the **same** product is also designed to replace **only** utilised air. In this case, it must comply with all relevant requirements of the Ecodesign measure (bearing in mind any exclusion from the scope of the Regulation itself).

In the case that the product has an outdoor connection with a supply/exhaust air flowrate in regular operation of a minimum of 10% of the total declared recirculated air flowrate, the unit is considered a ventilation unit and falls under Regulation 1253/2014.

12. We manufacture ventilation equipment for 'cleanrooms'. Cleanrooms can be found in hospitals, research centres, pharmaceutical and certain other manufacturing plants. The ventilation units used for clean rooms treat large volumes of air, with limited replacement of the treated air by new air. One objective is to ensure overpressure in the cleanrooms so that the level of pollutants (dust, microbes, etc.) is kept at a minimum or controlled. Are these units within scope?

As long as:

1. These products can be defined as ventilation units in line with definition 1 of article 2 of the Regulation 1253, i.e. "an electricity driven appliance……intended to replace air by outdoor air in a building")

and

2. These products are not listed in the scope exclusions,

the products fall within the scope of Regulation 1253/2014 and, if the products are RVUs, to Regulation 1254/2014. Please also take into account the clarifications given in the FAQs "What is meant by 'to replace utilised air with outdoor air'?" and "Are products designed for 100% recirculation considered ventilation units?"

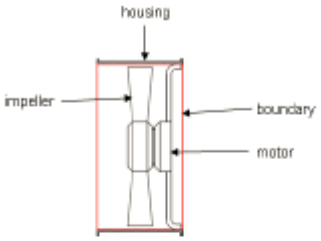
13. What is a 'housing' in terms of Regulation 327/2011, and what is a 'casing' in terms of Regulation 1253/2014 and Delegated Regulation 1254/2014?

'Regulation 1253/2014 shall not apply to ventilation units which are axial or centrifugal fans only equipped with a housing in terms of Regulation (EU) No. 327/2011', Article 1 (c). This implies that such products are considered 'fans' and shall be treated according to Regulation 327/2011.

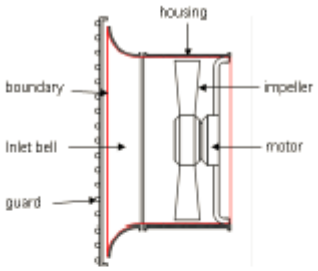
A working draft from CEN TC 156 WG 17 '*Fans - Procedures and methods to determine the energy efficiency for the electrical input power range of 125 W up to 500 kW - Complementary element*' describes the term "housing" in detail as a casing around the impeller that guides the gas stream toward, through and from the impeller. The housing may include an inlet bell, an inlet guide vane, an outlet guide vane or an outlet diffuser. For examples of boundaries for different fan types (in line with the working draft), see sketches (a) to (f) in Figure 9. A fan can be with or without housing. Protective guards are not included in the measurements of fans (guards are removed for testing).

Ventilation units are by definition equipped with a casing (Article 2 (1)), which, according to the above, is additional to the housing in terms of Regulation 327/2011. This implies that the casing is defined as all parts of the ventilation unit that interfere with the airflow, in addition to the housing. For a ventilation unit including a fan without a housing, there will only be the casing interfering with the airflow. Products that would normally be called 'box-fans' or 'roof-fans' are considered ventilation units. For examples of ventilation units within the scope of Regulation 1253/2014, see sketches (g) and (h) in Figure 9.

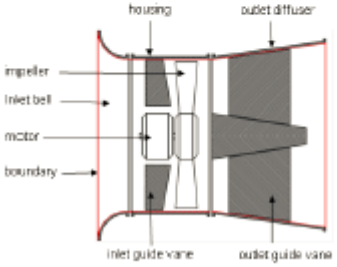
Figure 9 - Sketches of some fan types and ventilation unit types with indications for 'housing' and 'casing'. The term 'boundary' is used to indicate the practical boundary for the testing of fans. Source: CEN TC 156 WG 17 Working draft.



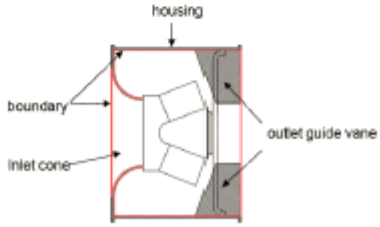
(a) Tube-axial



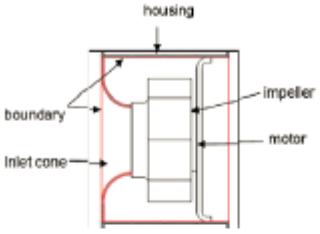
(b) Tube-axial with bell (guard not in boundary



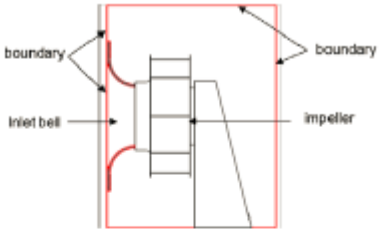
(c) Vane-axial with inlet bell, inlet guide vane, outlet diffuser & vane.



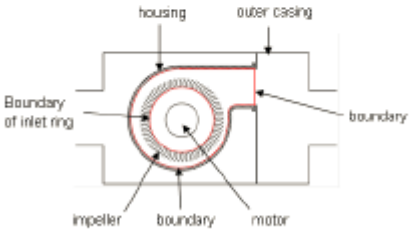
(d) Mixed-flow with inlet cone and guide vanes



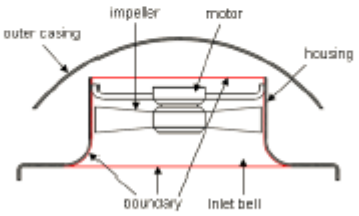
(e) Centrifugal fan with housing



(f) Centrifugal fan without housing (plenum fan)



(g) Boundaries of centrifugal fan inside a box-fan



(h) Boundaries of an axial fan with bell, inside a rooftop-fan

14. Under which conditions/parameters is a ventilation unit considered a 'non-residential ventilation unit' (NRVU) or a 'residential ventilation unit' (RVU)?

Definitions 2 and 3 of Article 2 of Regulation 1253/2014 provide the answer to this question. The following table summarises the information.

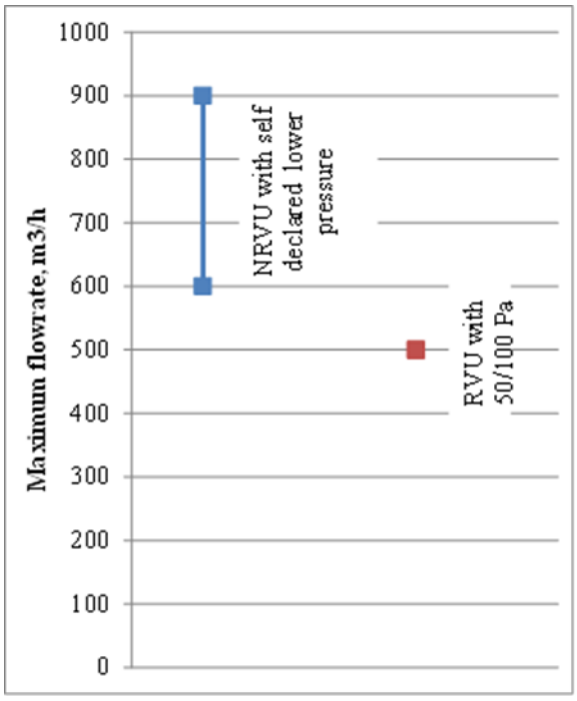
Table 13 – Parameters defining NRVUs and RVUs

<table>
<tr><td>Maximum flowrate ≤250 m^3/h</td><td>250 m^3/h < maximum flowrate < 1000 m^3/h</td><td>Maximum flowrate ≥1000 m^3/h</td></tr>
<tr><td rowspan="2">RVU</td><td>RVU (if the manufacturer declares the ventilation unit's intended use as being exclusively for a residential ventilation application)</td><td rowspan="2">NRVU</td></tr>
<tr><td>NRVU (if the manufacturer does not declare the ventilation unit's intended use as being exclusively for a residential ventilation application)</td></tr>
</table>

Note: For NRVUs, the maximum flowrate and corresponding external pressure are chosen by the manufacturer (i.e., there are no lower pressure requirements). Thus, the same ventilation unit design for a maximum flowrate 250 m^3/h < maximum flowrate < 1000 m^3/h can either be declared as an NRVU with a higher air flowrate and lower corresponding pressure (maximum flowrate at a pressure under 100/50 Pa*) or as an RVU (maximum flowrate at 100/50 Pa*). Figure 10 illustrates this.

**100/50 Pa refers to the question 'What is the maximum flowrate for a ducted RVU that is not able to deliver 100 Pa'?*

Figure 10 - Example of a ventilation unit design that can be declared as either an NRVU or an RVU



15. What is the reference flowrate for a non-ducted RVU?

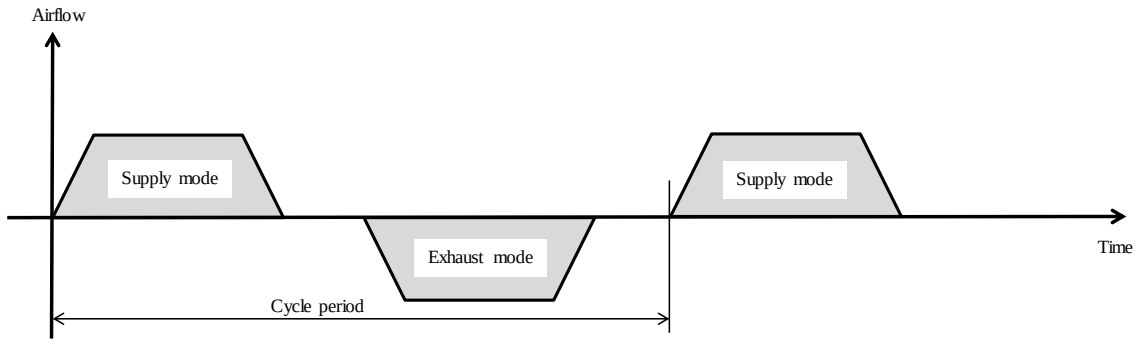
For a non-ducted RVU, the reference flowrate can be understood as 70% of the maximum flow or the next highest volume flow.

16. What is the flowrate (maximum, reference or nominal) for an alternating BVU?

In this type of unit, the exhaust airflow and supply airflow are sequential. Thus, the direction of the flow will change from exhaust to supply with a stop period in between. This must be taken into consideration and measured according to EN 13141.8, as described in draft Commission communication VERSION OF 21/12/2015, *Section 4.1, Determination of the reference and maximum flow for ducted RVUs.*

The airflow rate is the actual average flowrate over a cycle period as indicated by the grey area in Figure 11. In short, it is described as the mean value of the average measured airflow (without signs ±) in first one direction (supply) and then in the other direction (exhaust), divided by two, where both airstreams are corrected according to the stop period.

Figure 11 - The airflow rate of alternating units



17. What is the maximum flowrate for a non-ducted RVU that is not able to achieve 10 Pa?

Article 2, Definition (4) states that the maximum flowrate is related to the airflow at the lowest achievable total pressure difference, to be chosen from the following set of values: 10 (minimum), 20, 50, 100, 150, 200 or 250 Pa, whichever is equal to or just below the measured pressure difference value. In the case that a non-ducted RVU cannot deliver 10 Pa, the maximum flowrate is determined at the actual pressure and, according to the Regulation, the minimum pressure is declared to be '10 Pa' instead of the actual pressure (as in EN 13141-4 Section 3.5)

5.6 QUESTIONS REGARDING ANNEX I – DEFINITIONS (Regulation 1253/2014)

18. The Regulation describes a number of issues regarding fan efficiency for non-residential ventilation units (NRVUs). How is the fan efficiency of an NRVU defined and at which operating point must Ecodesign requirements be fulfilled?

For the calculation of internal specific fan power, $SFP_{int,}$:

- In cases where internal pressure measurements can be performed, the internal fan efficiency is to be used as defined and described in draft Commission communication VERSION OF 21/12/2015 Section 5.2.

- Alternatively, in cases where internal pressure measurements cannot be performed, the external fan efficiency is to be used for SFP_{int} determination for NRVU, as defined and described under Section 5.2 in draft Commission communication VERSION OF 21/12/2015.

In the case of UVUs, the Regulation distinguishes between general and UVUs intended to be used with a filter. UVUs intended to be used with a filter must fulfil requirements concerning maximum internal specific fan power SFP_{int_limit}.

All UVUs (intended to be used with or without a filter) must fulfil the minimum fan efficiency of ventilation units, ηv_u. The fan efficiency of a UVU is determined as described in draft Commission communication VERSION OF 21/12/2015, at the declared (nominal) flow and pressure of the reference configuration. This way, pressure loss attributed to the casing is taken into account. Please note that the operational point is not by definition the best efficiency point of the fan, but the nominal conditions of the ventilation unit as stated in Annex 1, 2 (2).

19. Is having one fan switched off an acceptable bypass facility for bi-directional RVUs?

Having one fan switched off during the summer (non-heating) **cannot** generally be considered a thermal bypass facility. It is only accepted as a bypass facility if the air volume flow in bypass mode is supported by supply/exhaust grills (openings) in the façade. Additionally, the same information requirements for installation instructions of unidirectional ventilation systems must be followed as described in Annex IV (r).

For bi-directional RVUs with one fan switched off as a bypass facility, it is deemed necessary that:

- The CTRL factor for central demand control (for the calculation of SEC) can only be used if these openings are also regulated by the control system of the units. The performance of the main fan(s) and the opening(s) are to be controlled according to the central demands.
- The CTRL factor for local demand control (for the calculation of SEC) can only be used if these openings are also regulated by local demands by the control system of the unit. The performance of the main fan(s) and the openings are to be controlled according to local demands.

5.7 QUESTIONS REGARDING ANNEX V - INFORMATION REQUIREMENTS FOR NRVUs (Regulation 1253/2014)

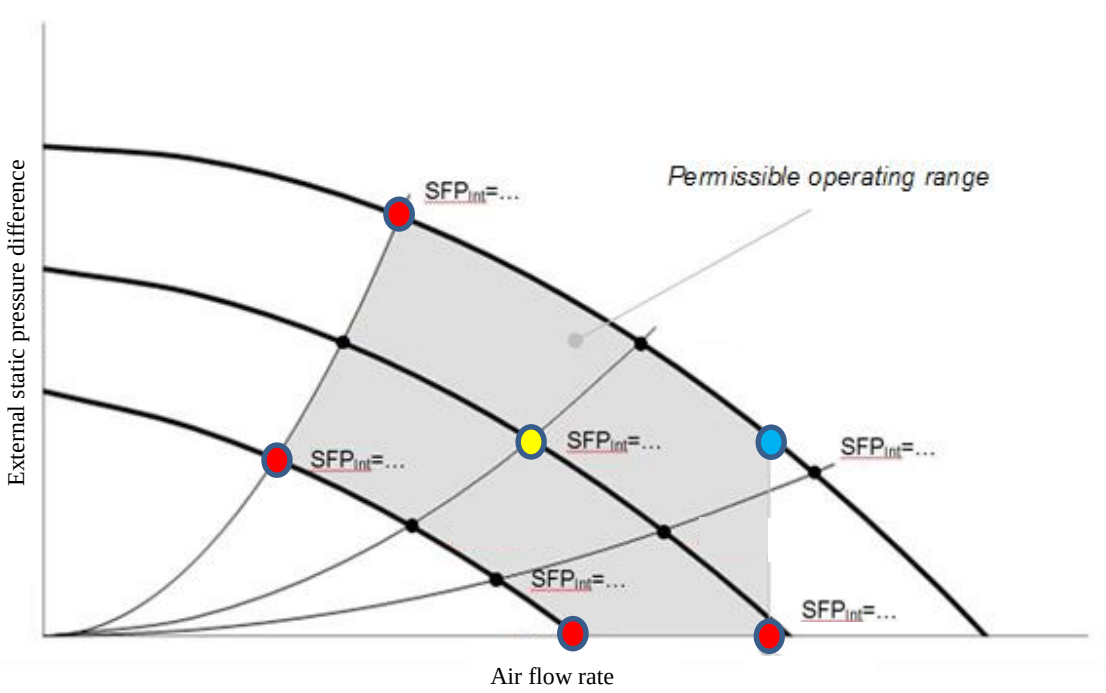
20. How should an NRVU be declared in the case that the design point is not known at the time it is placed on the market, e.g. in the case of mass-produced NRVUs?

Mass-produced NVRUs are normally designed for a wide range of working points and are mostly produced in large quantities. Their capacity is generally given in ranges and they can be used in different buildings and/or for different applications. Below, we suggest an optional method for declaring such products. Alternatively, the manufacturer can choose a specific working point and assess compliance with Regulation 1253/2014 via the standard approach. See question *What is it meant by the 'nominal flow rate' for NRVUs under Regulation 1253/2014? To which conditions should a manufacturer refer?*

Declaration of a mass-produced NRVU (optional)

If the working point is not specified by the customer, which may be the case for a mass-produced NVRU, the manufacturer can declare an area (graph) of nominal airflows with associated 'nominal external pressure (Δps, ext)'. See Figure 12.

Figure 12 - Example of declaration of a mass-produced VU



In this case, the declaration is as follows:

1. All values in Annex V in the Regulation (information requirements) for one nominal point within the grey area, with the largest flow and corresponding static pressure (indicated by the **blue dot** in Figure 12)
2. A graphical representation as above, containing at least five points where the outer limit is described in all cross sections (indicated by **red dots** in Figure 12) and an additional point **yellow dot** in the middle of the grey area, where the following values are indicated for each point:
    a) Internal specific fan power of ventilation components (SFP_{int}) and/or fan efficiency (η_{vu}) regarding type of unit
    b) Thermal efficiency of a non-residential HRS ($\eta t_{\_nrvu}$) (for BVU's only)
    c) Sound power level (L_{WA})
    d) Nominal flowrate (q_{nom})
    e) Nominal external pressure ($\Delta p_{s,ext}$)

The customer can use the NRVU if their operation point(s) (design working point(s) is within the declared area (grey area where the NRVUs comply with the minimum requirements).

The declaration as a mass produced product is optional, but all values with in the grey area must meet the requirements of the Regulation.

5.8 QUESTIONS REGARDING ANNEX IX – MEASUREMENTS AND CALCULATIONS (Regulation 1253/2014)

21. How should manufacturers handle filters that differ from the reference condition, e.g. an F9 filter instead of an F7 Filter?

NRVUs must be tested and calculated in accordance with Annex IX of Regulation 1253/2014. In the case of BVUs, filter correction factors are given for cases in which either the filter on the inlet side or the one on the exhaust side (or both) are missing.

In the case of UVUs intended to be used with a filter, such correction factors are not given; therefore, compliance with the SFP_{int} requirement shall only be assessed in the reference configuration.

In principle, the tests could be performed with a filter different from the ones foreseen in the reference configurations (see definitions 3 and 4 in Annex I, Part 2), e.g. using an F9 filter instead of an F7 filter. In this case, an appropriate (calculation) method must be used to infer (and declare) performance using the filter foreseen in the reference configurations.

5.9 FURTHER QUESTIONS

22. What is the reference configuration of an exhaust UVU?

Definition 4 of Annex I, part 2 of Regulation 1253/2014 does not explicitly provide specific indications on the reference configuration for an exhaust UVU. Therefore, the reference configuration of such products shall be in line with the general case ("'reference configuration of an UVU' means a product configured with a casing and at least one fan with variable speed or multi-speed drive"). The presence (or lack of) and typology of the filter are left to the manufacturer to determine (and consequently declare).

23. Is an EC-motor for a fan (with no sensor or external controller connected, only a 0-10 V input option for setting the speed) considered to be a VSD?

According to the specific Ecodesign requirements of Regulation 1253/2014, Annexes II and II, ventilation units must be equipped with a multi-speed drive or a variable speed-drive (VSD).

EC (electronically commutated) motors are not mentioned specifically as VSDs, but they are drives consisting of a motor and an integrated motor control that are able to vary speed over a wide range, typically by means of an external control signal (0-10 V). The Regulation 1253/2014 does not specify requirements for external control signals or sensors for VSDs. In this respect, EC motors (including integrated motor control) can be considered VSDs. Please note that for RVUs, demand control requires a device (or devices) that measures a control parameter and uses the result to automatically regulate the flow rate(s).

24. Is a cowl considered a ventilation unit?

In 13141-5:2004, a cowl is defined as an 'air terminal device with or without moving component, intended to be fitted on top of an exhaust duct, with aim, by creating negative pressure depending on the wind speed, to avoid reverse flow and to increase the extracted flow'. 13141-5:2004 also states that an assisted cowl is a 'cowl fitted with an auxiliary device using other energy sources than wind to compensate for lack of suction effect'. The auxiliary equipment can be a fan.

A cowl fulfilling the above definitions (assisted or otherwise) is not considered a ventilation unit under Regulation 1253/2014. However, the auxiliary device may be subject to Ecodesign regulations. Depending on the specific auxiliary device:

1. The auxiliary device may be considered a ventilation unit itself, under Regulation 1253/2014
2. The auxiliary device may fall under the fan regulation 327/2011

25. What is it meant by the 'nominal flow rate' for NRVUs under Regulation 1253/2014? To which conditions should a manufacturer refer?

The 'nominal flow rate' for NRVUs is the 'declared design flow rate' under the conditions described in definition 6 of Annex I, Part 2. Therefore, the manufacturer has the freedom to determine such conditions in more detail, depending on specific design choices (e.g. including or excluding a pressure reserve for clogging).

As an indirect conclusion from definition 8 of Annex I, Part 2, it is deemed necessary that the 'nominal flow rate' is the one at which the maximum rated fan speed occurs.

26. What is the demand for fluid mixture in an RAC system?

The percentage of ethylene glycol to be used in an RAC system is the mixture related to the design condition given by the manufacturer

If nothing is specified it is considered that the brine in the RAC system is a mixture with 25 % ethylene glycol and 75% water. A brine with 25% glycol has a freezing point at around -14 °C.

27. What is meant by 'continuously regulates the fan speed(s) and flowrates'? This question relates to the definition given in Annex I for 'Central demand control' and 'Local demand control'.

The word 'continuously' refers to the continuous measurement of the control parameter. The control should regulate continuously; therefore, the motor drive must also be able to continuously adapt the electrical power.

28. Is switching off the VU (maintenance switch off or equivalent) enough for the unit to be considered in 'off'-mode, as mentioned in Annex I, 1. Definitions (3) 'multi-speed drive'?

The definition in the regulation states that (3) "'multi-speed drive' means a fan motor that can be operated at three or more fixed speeds plus zero ('off')."

Turning the maintenance switch 'off' or equivalent is adequate for the 'off'-mode. Turning off a door switch or a circuit breaker is also adequate.

29. How can the latent (humidity-bound) energy (efficiency) be considered in the regulation?

The regulation does not take the latent energy/efficiency into consideration.
According to definition 6 of Annex I, Part 1 and definition 11 of Annex I, Part 2, the thermal efficiency shall always be measured under dry conditions, i.e. no condensation in the HRS, in accordance withEN308/ EN13141-7.

If a manufacturer has a product which exploits the latent energy when operating, the manufacturer is free to include technical specifications regarding latent energy in their own information documents.

30. What is the difference between local and central demand control?

According to Regulation 1253/2014, the definitions for local and central demand control are as follows (Annex I, part 1):

(24) 'central demand control' means a demand control of a ducted ventilation unit that continuously regulates the fan speed(s) and flow ***rate*** *based on* ***one sensor*** *for the whole ventilated building or part of the building at central level*

(25) 'local demand control' means a demand control for a ventilation unit that continuously regulates the fan speed(s) and flow ***rates*** *based on* ***more than one sensor*** *for a ducted ventilation unit or* ***one sensor for a non-ducted unit***

In other words, Regulation 1253/2014 states that the difference between local demand and central demand is determined by both the number of sensors and the difference in the flow rate (or rates) being controlled.

Therefore, local demand control for ducted BVUs refers to at least two sensors placed locally in zones/rooms, or in the airstream to/from the rooms/zones where the airflow to the individual rooms/zones is regulated according to the local demands measured by the sensors in/to/from the room/zone. The local flow to/from the rooms/zones is usually regulated by dampers if it is ducted centralised ventilation, and if it is local ventilation by a device that is part of the total unit. The total flow provided by the fans in the unit is operated according to the sum of the individual local demands, usually determined by pressure sensor(s).

For single locally-placed non-ducted units, Regulation 1253/2014 only requires, for the local demand control, one sensor and the regulation of the entire flow of the unit as it is placed locally in the room/ zone.

31. What is meant by the "energy performance" and "energy classification" of filters?

In Annex X, the information requirements for NRVUs require:

(p) energy performance, preferably energy classification, of the filters (declared information about the calculated annual energy consumption);

The suggested method to provide this information requirement is the declaration of the filter classification (efficiency) determined according to Annex IX.

32. How should one measure the "casing-radiated" noise for a single room ventilation unit not intended to be equipped with duct connections?

The emitted casing-radiated noise for ventilation units without duct connections can be measured using the sound intensity method as described in ISO 13347-4. This makes it possible to differentiate the emission of sound from different (partial) surfaces of the casing. Thus, a surface with openings (inlet or outlet) can be subtracted. With high air velocities, some caution must be observed; this can be achieved by using windscreens, observing larger measurement distances, etc.

Please note that the total noise from a non-ducted unit should include the noise emitted from the openings in order to be a usable measure of the sound in a room with the unit installed.

If measurements are taken using only sound pressure methods, testing ducts with efficient silencers may be a remedy for reducing duct noise. However, these may influence the pressure loss /air velocity, and thus the sound made by the fan, etc. This is not a problem when using the sound intensity method. (See also ISO 9614-2).

33. How should one measure the airflow sensitivity to pressure variations for small unidirectional units?

For the measurement of the airflow sensitivity to pressure variations at + 20 Pa and – 20 Pa in small unidirectional (exhaust or supply) RVUs with an electric power input of less than 30 W (outside the scope of Regulation 1253/2014 except for information requirements), pressure variations will influence the airflow rate to a large degree, as the test pressure often exceeds the unit's maximum provided pressure.

Therefore, in this specific case, the declared value for airflow sensitivity to pressure variations will be "not applicable."

6 Sources of Additional Information

6.1 European Commission

6.1.1 Regulations

- Commission Delegated Regulation (EU) No 1253/2014 of 7 July implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to the ecodesign requirements for ventilation units
- Commission Regulation (EU) No 1254/2014 of 11 July 2014 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to the energy labelling requirements for ventilation units

6.1.2 Others

- DG ENER – Energy Efficiency of Products
- DG GROW – Ecodesign webpages[11]

6.2 European Standardisation Organisations

- CEN - European Committee for Standardization
- CENELEC - European Committee for Electrotechnical Standardisation

6.3 Retailer & Industry Associations

- EVIA – European Ventilation Industry Association - http://www.evia.eu/en/Home/Home/
- EUROVENT - Europe's Industry Association for Indoor Climate, Process Cooling, and Food Cold Chain Technologies - https://eurovent.eu/

[11] http://ec.europa.eu/growth/industry/sustainability/ecodesign/product-groups/index_en.htm