Paris, June 11th

UNICLIMA is the french association which represents the interests of Heating, Ventilation, Air conditioning and Refrigeration industries.

Reference sources

- *Eco Design regulation n°1253/2014*
- *Eco Design regulation n°1254/2014*
- *Discussion document : Considerations about scope of Regulation 327/2011 and Regulation 1253/2014 for ventilation products producing an airflow in one direction only and intended to replace air in a building or part of a building*
- *Explanatory note on internal Specific Fan Power and draft transitional methods/ Preliminary DRAFT prepared for the first stakeholder meeting of the Technical Assistance Study of the Ventilation Units Product Group 15 June 2015*

Summary

1. ***Unidirectional units-fans***

The systematic approach proposed in the document which considers only a first layer and a second layer (without any function consideration) is a nonsense.

General comments on housing and casing:

- The housing is part of the fan and increases the performance of the fan. It is very close to the impeller, guides gases (definition 327/2011). It's most of the time a scroll.

- The casing will most of the time decrease the performance. It is not so close to the impeller and has an effect on aerodynamics of the flow but has also one or more other functions: structural function, ductwork connections, esthetic function, rain protection, mechanical protection,…

- A fan may or may not have an housing (as mentioned in the first paragraph of the systematic approach). Forward curved fans usually have an housing. Backward curved fans may have one or not. For fans without housing, then the first layer is directly the casing and cannot be considered as a housing

Comments about the discussion document :

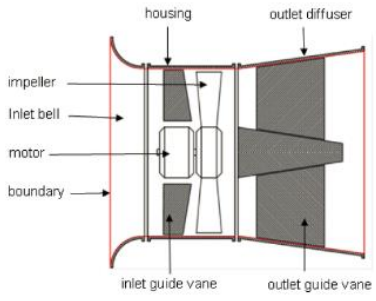
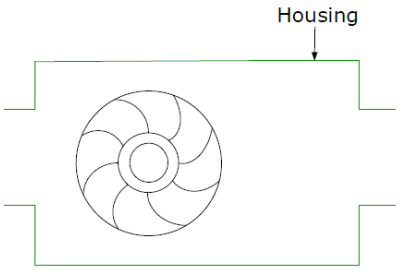
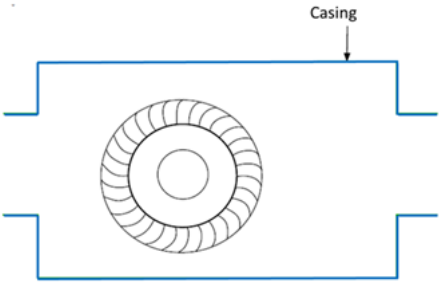
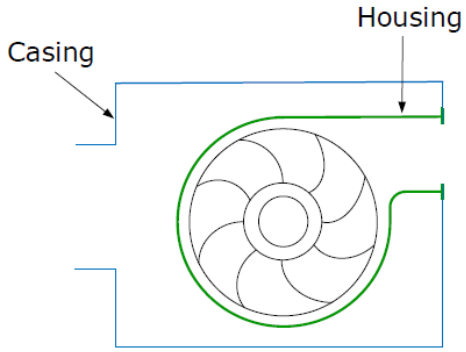
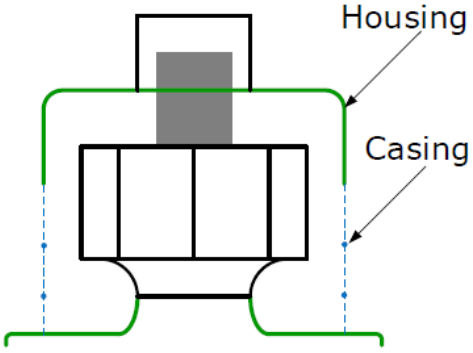
Extract from discussion document	Comments
Precision of the definition of housing	327 regulation says that an 'Housing' means a casing around the impeller which guides the gas stream towards, through and from the impeller ; what means very close to the impeller? Is the inlet and outlet structure of an axial fan as in duct fan considered as "housing" or "casing", it needs to be more precise.  **(c) Vane-axial with inlet bell, inlet guide vane, outlet diffuser & vane.**

Figure 10 : « Fan with large housing » 	The fan has no housing but a casing. The green lines may be in blue For us in this case, this ventilation unit shall fall under Regulation 1253/2014 (see figure below) 
Figure 12 : Ventilation unit including fan with scroll housing and casing 	Products of figure 10 and 12 have the same functionality from the end user point of view. They have to be in the scope of the same ErP regulations. With the first/second layer approach they would be considered differently, what is misleading. **Both fans technologies (forward curved with scroll and backward curved with or without scroll) have to be dealt in the same way.**
Figure 14 : « Ventilation unit with fan and grilles »  *Figure 14 Ventilation unit with fan and grilles*	○ The inlet cone is the only part of the fan housing. Any other green or blue parts have to be considered as casing ○ **Products of fig 3, 4, 14, 16 have the same function and have to be treated in the same way**. This is not the case with the first/second layer approach

What is more, the first/second layer approach would remove many ventilation products above 30 W from lot 6. Products between 30W and 125W would have no minimal performance requirement what would decrease energy savings awaited from ecodesign regulations.

We ask for the removal of the first/second layer approach and to be consistent with R327 approach .

2. SFPint : Comments about preliminary draft explanatory note

a. Overview

Both tailor-made units and standardized compact units are used for a wide range of working points. Tailor made units are frequently used far from the working points originally specified by customer. This is more and more the case as variable speed control is more often used and will be required in most of cases by 1253/2014.

Therefore we fully agree that **two groups should compete at same conditions and shall have the same treatment**

b. Comments on the SFP int explanatory note

Extract from SFP int explanatory note	Comments
Question 7 *Can an area be used instead of only one point?*	The final formulation is not confirmed yet : one declared point or a field of point If the declaration of the point tends to a field of nominal airflows for compact units, it should also apply to tailor made NRVU's. The regulation for NRVU is based on one-point assessment, as R327 for fans. If it's change to an aera assessment, it needs to be very well documented.
Page 18 : Pressure relief box *To analyse which method is applicable, DTI has conducted a series of measurements in the unit and in idealized airflow respective. For the analysis the, we have tested the following methods:* *- parallel/cross tubes (NVG);* *- pitot;* *- static pressure instrument (alternatively pitot exclusively with static pressure);* *- pressure relief box (simple electric membrane box); and* *- pressure taps mounted by the manufacture in the casing (has to be in level with the inside of the unit casing and not as the picture below)*	We ask to clarify the measurements in the unit with the pressure relief box. Indeed more tests and measurements should be done to compare the different results. We have some questions/remarks about this method : - Pressure measurements in the AHU are not enough explicit - To measure in static, it should have same sections. Usually, total pressure is used for components (in ductworks, in units); static pressure is used only for fan assessment - Is it really a reliable measurement on every unit and every relief box of this type (one point, representative of the static pressure ... etc.) ?

3. Questions on articles of the Regulation 1253/2014

Extract from R1253/2014	Comments
Article I : Scope *This Regulation shall not apply to ventilation units which: (a)are unidirectional (exhaust or supply) with an electric power input of less than **30 W**, except for information requirements;*	Could you precise the power of 30 W announced in the regulation for the exemptions of ventilation units?

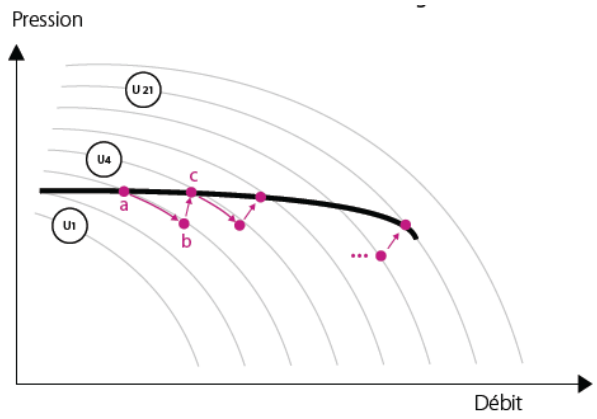
Annex I : Definition of speed

The wording "speed" is confusing in the definitions. In USI, the speed is normally expressed in $m.s^{-1}$. This is different from a frequency, which is expressed in hertz (s^{-1}). Thus in ANNEX1 (definitions), the wording "speed" must not be interpreted as rotational frequency (RPM), but as "aeraulics curve". This interpretation is in line with the spirit of the directive, which aims at limiting the energy consumption of the fan through – notably- an adaptation of the power to the demand.

Following this interpretation, we can say that:

- The "multi-speed drive" (3) concerns in general asynchronous single phase motor in which change of aeraulics curve is generally activated through the commutation of various capacitors.
- The "variable speed drive" (4) concerns fans which voltage assigned to the motor can be adapted continuously to the demand. EC motors are by essence VSD.

Example of a VSD:



On this chart, U1, U2, … U21 are different "speeds" (aeraulics curves) that enable to obtain a unique aeraulics curve (black bold) to continuously adapt to the demand airflow. In demand controlled ventilation, the airflow is varied through the modulation of the opening of the connected exhaust units, and the power is optimized every time. The resulting curve (adapted pressure for any airflow) is obtained by the rotational frequency of the impeller (need forward curved impeller), which is also kept constant. In this example, U21 is obtained at the maximum voltage. The others (U1, U2, etc.) are obtained through a fraction of the maximum voltage.

It would be useful that the interpretation guide precise this point

Annex I : Variable speed drive *(4)'variable speed drive (VSD)' means an electronic controller, integrated or functioning as one system or as a **separate delivery** with the motor and the fan, which continuously adapts the electrical power supplied to the motor in order to control the flow rate;* *From 1 January 2016 for RVU's or NRVU's:* - *All VUs, except dual use units, shall be equipped with a multi-speed drive or variable speed drive.*	To answer to this requirement, a ventilation unit with AC motor has to be equipped with VSD. « Separate delivery » means that the VSD, if not included in the ventilation unit itself, may be delivered separately but it has to be ordered at the same time than the ventilation unit, under the same reference/ same article code. In other words, when the customer will buy the VU, he will get the VU with the VSD whatever it's integrated on the VU or in one other board Can it be clarified in the FAQ
Annex I: Thermal by-pass facility *35) 'thermal by-pass facility' means any solution that circumvents the heat exchanger or controls automatically or manually its heat recovery performance, without necessarily requiring a physical airflow bypass (for example: summer box, rotor speed control, control of air flow);*	For RVU and NRVU, the units should a thermal by-pass facility. We'd like to warn than switch off of one fan is not a satisfactory solution from an IAQ perspective to answer to this requirement. A proper ventilation has to be ensured all year round, even during the summer. A BVU system with supply fan switched off is not comparable to a UVU system because UVU systems are designed to work with air inlets. In case of BVU, there is no air inlet, so that if the supply fan is switched off there isn't fresh air anymore in bedrooms and living room.

4. Application of the regulations

- **Clarify "placing on the market"**

Article 1 ***Subject matter and scope***

This Regulation applies to ventilation units and establishes ecodesign requirements for their placing on the market or putting into service.

Could you clarify in the FAQ the meaning of "placing on the market"

- **Specific case : Case of blanket order agreement**

There is a problem concerning studies based basis on technical characteristics of non-compatible ERP equipment, negotiated for example in 2015, but which will be order for delivery in 2016.

We ask the commission to clarify this specific case

UNICLIMA would like to thank you for the work done and the different paper that have been made. We look forward to the opportunity for discussion of these points at the stakeholder meeting.