UNICLIMA comments on documents about Regulations No.1253/2014 & 1254/2014

UNICLIMA, 2015/07/03

Uniclima is the French association of heating, ventilation, air conditioning and refrigeration Industries. The manufacturers represented by our association are French companies for half of them or come from different European member's state as Spain, Sweden, Germany and Italy.

The French market is one of the most important in Europe with 760 000 residential ventilation units and 110 000 non-residential ventilation units sold each year.

1. SFP$_{INT}$ AND THE DRAFT TRANSITIONAL METHODS

The nominal airflow q_{nom} is defined for non-residential ventilation units in R1253/2014 as *"the declared design flow rate of an NRVU at standard air conditions 20 °C and 101 325 Pa, whereby the unit is installed complete (for example, including filters) and according to the manufacturer instructions;"*

In the explanatory note, it's said that *"The nominal airflow must be seen as the maximum airflow of the NRVU in the sale."* For french industrials, the maximum airflow is not representative of the typical operated airflow.

Proposal: We propose to check compliance of SFPint and minimum thermal efficiency (for BVU) at **70% of the maximum airflow**

- Maximum airflow: maximum design airflow
- **Nominal airflow: 70% of Maximum airflow**

Justification:
The maximum airflow is a design airflow and It is often a peak airflow, calculated by designers in order to ensure any unexpected factor on site. Ventilation units are also more and more used with airflow control (Demand Control Ventilation). For these reasons the average airflow which is relevant for energy assessment is much lower than the maximum airflow. 70% is the value used for residential ventilation units. We propose to keep it also for non-residential ventilation units, for both "compact" and "taylor made" units.

2. CONSIDERATIONS ABOUT THE SCOPE OF REGULATION 327/2011 AND R1253/2014

The first layer and second layer approach is unsuitable.

- The housing is a part of the fan and increases the performance of the fan. It is very close to the impeller and guides gases. Typically the scroll around a fan and/or the inlet cone are parts of the housing.

- The casing decreases 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. Forward curved fans usually have a housing. Backward curved fans may have one or not.

- Please consider new definitions introduced in the draft review of 327/2011 (30.03.2015): fan / stator / impeller: they give a clear way to decide what is a fan.

The first/second layer approach would:

- Remove ventilation units with backward impeller without scroll from lot 6. It will also create of a loophole. In fact products between 30W and 125W would have no minimal performance requirement (no covered by R327/2011), what would decrease energy savings awaited from eco-design regulations.

- Make very difficult for box fans with backward impeller without scroll, that would be considered in R327/2011 to achieve minimal requirements. However requirements in R327/2011 are set for the fan alone (without the box) and are already very ambitious.

We insistently ask for the removal of the first/second layer approach and the alignment with new definitions introduced in draft review of 327/2011

3. LOW PRESSURE VENTILATION IN ECO-DESIGN REGULATION:

- Up to 1000 m^3/h hybrid fans could be considered as RVU (residential ventilation units) if declared by the manufacturers, and their SEC could match the requirements. However the regulation doesn't allow the assessment of hybrid ventilation systems due to the pressure level which is lower than the ones required in the regulation (100 and 50 Pa for ducted units).

- Above 250 m^3/h (if not declared as RVU) or above 1000 m^3/h they would be considered as NRVU and will never match the efficiency requirements due to very low pressure level.

- These products would hardly fulfil the requirements of the directive as it is written today although they respect the spirit of the text, as offering a very good energy performance along the year.

Proposal : We propose to work in parallel with the work on going in the CEN groups