



JIEG Comments on Ecodesign Lot 6 VENTILATION 8th April 2013

Draft Working Document Ventilation Units - Version 11.4.2013
Annex II: Ecodesign Requirements for NRVU
2. Specific Ecodesign requirements

Comment on definition of minimum requirements of SFP_{INT} :

The existing proposals do not meet the product requirements for all types and designs of a ventilation unit.

The SFP approach must consider:

- The type of heat recovery:
 - Systems with intermediary medium
 - Recuperative
 - Regenerative
- The size of the unit (scaling factor) considering
 - Compact units
 - Taylor made units
 - Flat units
- The velocity inside the unit

In the calculation of SFP and the scaling factor, aspects of refurbishments in limited space have to be considered.

The JIEG disagrees with the proposed formulas for minimum SFP requirements.

The JIEG proposes a new universal formula for all types of heat recovery.

The minimum requirements shall depend on the units size. The JIEG is proposing a formula depending on the air volume flow (Scaling Factor S).

It shall be allowed to compensate a lower heat recovery with a lower SFP approach because plate heat exchanger or rotors are only available in dedicated steps.

Example: At a given size of the unit, the best heat exchanger might reach 64% instead of the target 65%. The next size might be 68% but with a much bigger unit size. The JIEG proposes to allow a compensation within a limit of 2%.

The JIEG agrees on the efficiency bonus E as a basis for calculation:
 $E = (\eta_t - \eta_{t,min}) * 3000$.

This means the minimum requirements on thermal efficiency shall have design tolerance of $\eta_{t,min} - 2\%$

Comment [Hd1]: Is this correct?
According Eurovent proposal it might be 6000. To be checked.

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Proposal:

2. Specific ecodesign requirements

Non-residential ventilation units shall comply with the following requirements:

(1) From [date to be inserted: [2] year after the entry into force of the Regulation]:

~~the minimum fan efficiency for ventilation units is~~

15% for $P < 30\text{W}$,

$6,2\% * \ln(P) + 36,7\%$ for $30\text{W} \leq P \leq 10\text{ kW}$ and

57,8% for $P > 30\text{ kW}$,

Double/triple regulation in combination with Fan Regulation EU 327/2011 and SFP_{INT} approach

– The minimum internal specific fan power of ventilation components (SFP_{int}) in $\text{W}/(\text{m}^3/\text{s})$ is

– for a BVU ~~with run-around HRS~~

$1100 + (\eta_{t_nrvu} - \eta_{t_min}) * 3000 - F + S$, if the thermal efficiency η_{t_nrvu} is at least $\eta_{t_min} - 2\%$,

The scaling factor:

$S = -336,5 * \ln(qV) + 3408$ for $qV \leq 25.000\text{ m}^3/\text{h}$

$S = 0$ for $qV > 25.000\text{ m}^3/\text{h}$

1500 – F, if the thermal efficiency η_{t_nrvu} is between 63% and 68%,

~~for a BVU with other HRS~~

$1000 + (\eta_{t_nrvu} - 0,73) * 3000 - F$, if the thermal efficiency η_{t_nrvu} is at least 73%,

1000 – F if the thermal efficiency η_{t_nrvu} is between 67% and 73%,

250 for an UVU intended to be used with a filter.

(2) From [date to be inserted: [4] years after the entry into force of the Regulation]:

– The minimum internal specific fan power of ventilation components (SFP_{int}) in $\text{W}/(\text{m}^3/\text{s})$ is

– for a BVU ~~with run-around HRS~~

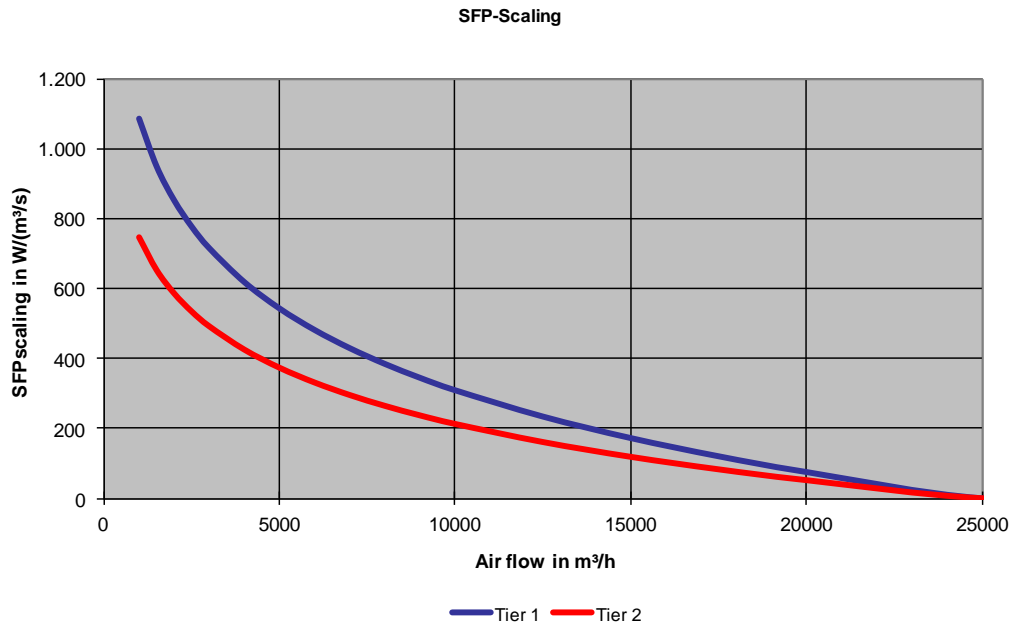
$900 + (\eta_{t_nrvu} - \eta_{t_target}) * 3000 - F + S$, if the thermal efficiency η_{t_nrvu} is at least $\eta_{t_target} - 2\%$,

The scaling factor:

$S = -232,3 * \ln(qV) + 2352$ for $qV \leq 25.000\text{ m}^3/\text{h}$

$S = 0$ for $qV > 25.000\text{ m}^3/\text{h}$

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Scaling Factor for bidirectional ventilation units

Justification:

The JIEG has made several selections considering different sizes and heat recovery systems.