Product Information

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New UK Building Regulations and Specific Fan Power (SFP)

1. **The new 2010 UK Building Regulations provide technical guidance for UK buildings and specifically the 2010 amendment to Part L of Schedule 1 specifies the need to provide more energy efficient fixed building services, with effective controls. The Government has published practical guidance on ways of achieving compliance that makes reference to Specific Fan Power (SFP). This Product Information is issued to aid better understanding of this subject and to show the difference between the 2006 and 2010 regulations.**

2. Further data can be obtained from:-

   www.communities.gov.uk and www.planningportal.gov.uk/approveddocuments

   Refer :-
   The Building Regulations Approved document F
   The Building Regulations Approved documents L1A, New Dwellings.
   The Building Regulations Approved documents L1B, Existing Dwellings
   The Building Regulations Approved documents L2A, New Buildings other ….
   The Building Regulations Approved documents L2B, Existing Buildings ….
   The Building Regulations Non – domestic heating, cooling and ventilation compliance guide. 2010.

3. **Refer document F**
   "consideration should be given to mitigation of ventilation energy use where applicable, by employing heat recovery devices, efficient types of motors **and/or energy saving control devices in the ventilation system."**

   It also provides guidance on ventilation rates for dwellings and buildings other than dwellings.

4. **Refer document L2A Conservation of fuel and power in new buildings other than dwellings.**
   "reasonable provision for the performance of air handling plant would be to follow the guidance in the Non domestic heating, cooling and ventilation compliance guide in providing: a. suitable efficient air handling plant: and b. effective control systems."

   "… the system should be capable of achieving a specific fan power at 25% of design flow rate no greater than that achieved at 100% design flow rate. Reasonable provision for ventilation system fans rated at more than 1,100 Watts would be to equip them with variable speed drives."
   "The guidance is not applicable to smoke control fans and similar ventilation systems only used in abnormal circumstances."

5. Refer doc " Non domestic heating, cooling and ventilation compliance guide."

Defines the SFP values that apply to differing systems for New buildings and Existing buildings.

Typical maximum permissible SFP (Watts / (litre/s))	2010 New Build	2010 Existing Build	2006 New Build	2006 Existing Build
Central mechanical ventilation inc heat, cool, + heat recovery	**2**	**2.5**	**2.5**	**3.0**
Central mechanical ventilation with heating + cooling	**1.8***	**2.2**	**2.0**	**2.5**
All other central systems	**1.4**	**1.6**	**1.8**	**2.0**
Local ventilation only units within the local area, such as window / wall / roof units serving one room or area.	**0.4**	**0.5**	**0.5**	**0.5**

*SFP for AHU with heating, cooling and heat recovery = 1.8 + 0.3 = 2.1

Please also note that you need to consider adding 0.1 respectively for any additional heat recovery return filter and humidifier.

Page 52, separately defines SFP of an air distribution system and the SFP of an individual fan :-
The SFP value for a system is defined as the sum of the total circuit – watts (consumed electrical power) for supply and extract fans, including all losses through switchgear and controls, divided by the design airflow rate through that system. (Watts / (litre / s))
For an individual fan, the SFP is defined by equation
SFP v = P mains / q f (Watts / (litre / s))
Where P mains is the power supplied to the fan (W) and q f is the airflow rate through the fan (litre / s)

6. To calculate the SFP value for a fan we need the following -

a) motor electrical input power and the power consumed by any additional associated control, switchgear etc. Or where used, speed controller electrical input power, and the power consumed by any additional associated control or switchgear etc.

And

b) air volume flow rate.

7. Fläkt Woods have added SFP data for many fans into the Fan Selection Tool (FST) and more will follow.