

## The European standard EN 13779:2007

### IDA Outdoor Air

EN 13779 and EN 15251 are decisive for the determination of the correct IDA class for indoor air quality. EN 13779 categorises the indoor air quality into 4 classes: IDA 1 to IDA 4. (Table 1).

Catagory	Discription
IDA 1	High indoor air quality
IDA 2	Medium indoor air quality
IDA 3	Moderate indoor air quality
IDA 4	Low indoor air quality

Table 1: Indoor air quality classification. Source: NEN EN 13779:2007.

It is customary to define the indoor air quality on the basis of the amount of outside air per person, per m<sup>2</sup> or on the basis of the increase in the CO<sub>2</sub> value (as an indicator for the emission of gas by organic substances).

The concentration of certain undesirable, volatile pollutants, which can be released into the air (paint, carpeting, glue, chipboard, photocopiers, etc.), such as total volatile organic components (TVOC), can also be a decisive factor (see EN 15251). Table 2 shows this relationship.

Class	CO <sub>2</sub> in PPM Outdoor air		Outdoor air in m <sup>3</sup> /h person	
	Typ. reach	Std. value	Typ. reach	Std. value
IDA 1	<400	350	>54	72
IDA 2	400-600	500	36-54	45
IDA 3	600-1000	800	22-36	29
IDA 4	>1000	1200	<22	18

Table 2: Air quality in relation to CO<sub>2</sub> values and amount of outdoor air (non-smoking areas). Source: NEN EN 13779:2007.

### Air inlet for outdoor air and relative humidity

For a good filtering effect, it is important that the outdoor air inlet is set up in such a way that the air is clean and dry, and no free moisture (rain, snow) can enter the system, to prevent the effects of exceptional weather conditions and mould growth in the filter.

EN 13779 gives a relative humidity (RH) of < 90% with a possible excess during short periods as a result of extreme weather conditions. An average RH over three days of < 80% for the entire system is given as the limit. Preheating is a possibility to control the RH. The recommendation for the use of the biostatic treated air filters has been omitted in the last edition of VDI 6022.

Annex A2.2 of EN 13779 gives detailed instructions and examples to keep the outdoor air intake clean, free from moisture and free from (avoidable) pollutants.

### The filter class depends on the outdoor air and indoor air quality.

Outdoor air quality	Indoor air quality			
	IDA 1 (high)	IDA 2 (medium)	IDA 3 (moderate)	IDA 4 (low)
ODA 1 (pure air)	F9	F8	F7	M6
ODA 2 (particulate matter)	F7 +F9	M6 + F8	M5 + F7	M5 + M6
ODA 3 (high concentrations of particulate matter and gaseous pollutants)	F7 +GF +F9*	F7 +GF +F9*	M5 + F7	M5 + M6

\* GF = Gas filter (carbon filter) and/or chemical filter.

Table 3: Recommended minimum filter class per filter section. Source: NEN EN 13779:2007.