

THE SWEDISH CODE OF STATUTES SFS 1991:1273, COMPULSORY VENTILATION CHECKS TO BE CONTINUED

W. Rydholm

*Boverket, National Board of Housing Building and Planning,
Box 534, SE-371 23 Karlskrona, Sweden*

ABSTRACT

Since 1991 has Sweden regulations on compulsory inspection of ventilation systems (OVK). The reasons to issue these regulations were many studies on poor indoor climate and health problems for building occupants. The studies have shown also that poor upkeep and maintenance have led to a decline in the performance of existing ventilation systems. If, in the future, we do not look after our ventilation systems properly and adapt operation and maintenance to current user habits, then even more buildings will become problem buildings. More people will suffer health problems unnecessarily. 2003 had Boverket a poster presentation on these regulations at the 24th AIVC Conference in Washington, USA. 2007 – 2009 have been OVK-regulations changed because of EPDB (Energy Performance of Buildings Directive) and new Swedish National Regulations on Energy Declaration of Buildings.

2008 had Boverket issued "Regulations for Performance Checks on Ventilation System, OVK" with rules and recommendations to them.

A new edition is coming in April 2009 concerning the last revision on inspection intervals and different inspector qualification classes. Regulations are able to load free from Boverket web-site www.boverket.se. Just now only in Swedish but an English edition shall come next year.

KEYWORDS

Ventilation system, performance check, indoor climate, check inspection, OVK, energy declaration.

WHAT DOES THE SWEDISH LEGISLATION SAY?

Swedish Planning and Building Act, PBA 1987:10

Buildings are to provide opportunities for good hygiene, a good working environment and a satisfactory indoor climate. From the legislation follows in addition that the ventilation systems must be looked after and maintained.

The demand for maintenance means that the function of a building may not manifestly deteriorate in relation to what was originally intended.

SFS 1991:1273 (Compulsory ventilation checks)

The owner of a building is responsible for ensuring, that all checks are carried out, both before, the system is brought into use for the first time as well as at regular intervals during the lifetime of the building.

Performance checks must be carried out in all buildings with the exception of:

- detached and semi-detached dwellings with natural ventilation or only mechanical exhaust air ventilation without energy saving exchanger,
- buildings for agriculture, forestry or similar activities,
- industrial buildings,
- buildings which are for Total Defence purposes and are secret.

It should be noted that offices and personal areas in industrial buildings are not excepted from checks.

Checks are to be carried out by an inspector who has either received national authorization from certification bodies advised for this purpose, or has been approved by a municipality for "certain control".

TABLE 1
*Inspection intervals, category of buildings (be valid from 1 May 2009)
and inspector qualification class (be valid from 1 November 2009)*

Type of building	Category	Ventilation system	Inspection interval	Inspector qualification class (lowest level)
Day-care centres, schools, health care centres, etc.	1	All types of systems	3 years	K
Blocks of flats and office buildings, etc.	2	Balanced	3 years	K
Blocks of flats, office buildings, etc.	3	Mechanical exhaust	6 years	N
Blocks of flats, office buildings, etc.	4	Natural	6 years	N
One and two-dwelling houses.	5	Mechanical exhaust with energy saving exchanger and Balanced	Only the first inspection when ventilation is taken into use	N

Comments on the terms

The category day and health centres, schools should include pre-school premises, secondary schools, leisure centres and old people's homes. The category does not include institutions for higher education (e.g. universities). These are included in the category office buildings.

The category blocks of flats and office buildings includes meeting rooms, shops, theatres, cinemas, sport halls, terminals, museums, exhibition halls, hotels and garages.

Balanced ventilation refers to the fan ventilation of supply and exhaust air. Mechanical ventilation refers only to fan-controlled exhaust air.

Natural ventilation refers to the ventilation created by thermal forces.

Inspector qualifications

Performance checks of ventilation systems are to be carried out by an inspector who is authorized by certification bodies advised for this purpose, or locally by the municipal committee responsible for planning and building matters.

Only those persons having the necessary training and experience and who are suitable for the task can be approved.

Authorization is issued for two different levels: authorizations N for simple installations and authorization K for more complicated installations.

Authorization N entitles the holder to check the ventilation systems in one or two-dwelling houses as well as natural and mechanical ventilation systems in blocks of flats and offices, etc.

Authorization K entitles the holder to check all types of ventilation systems.

Inspection implementation

There are considerable variations in how installations and buildings are designed and constructed. Each ventilation performance check should therefore be adapted as far as possible to the individual building. However, the following points shall always be included in a ventilation performance check:

- operation and maintenance instructions,
- measurement methods,
- air change, flows, humidity and radon,
- fans and air handling units, recirculated air and ventilation noise,
- deposits in ventilation ductwork,
- user viewpoints,
- if energy savings in ventilation systems are possible.

A report on the results of checking the performance of a ventilation system should be drawn up and signed by the inspector. The report should include the official designation of the property, the owner of the building, the date of the performance checks, the measurements carried out, comments on what faults are to be rectified before re-inspection, advice to the property owner concerning alternative solutions and a final comment about acceptability or otherwise of the performance of the ventilation system. The report should be sent to the property owner and to the municipality i duty of control of the owners and their responsibility to consider all of these faults the inspector has found in ventilation systems.

From the second control shall inspector also check such performance data as needs to calculate energy uses for ventilation systems. It means flows, effects on fans and motor dampers, SFP, operation times and others.

Finally shall inspector advice the owner some possible and necessary energy saving solutions for ventilation systems. These recommendations and the data on energy uses are important for energy declaration of the building. These recommendations are not allowed to impair indoor climate in the building.

Following five groups of energy savings of ventilation systems can be possible to advice the owner of the building:

- 1) to change flows, pressure, steering and operation control to receive optimum values,
- 2) improve the function of ventilation systems,
- 3) adjust operation time to the use of the building and sphere of activities,
- 4) improve operation and maintenance of ventilation,
- 5) improve and create correct documentation and proceedings papers on ventilation system for users and inspectors.

A special certificate will be issued after an inspection has been carried out and will include the date of the inspection. The property owner shall place the certificate in a clearly visible position in the building.

Boverkets project and investigation on technical statement and indoor climate in Swedish buildings (BETSI), 2006-2009.

In order of the Swedish Environment Ministry has Boverket since 2006 investigated 2000 buildings in Sweden and checked their indoor climate and technical statement. The results of these tests and controls can discuss and present on the next AIVC conference 2010.

REFERENCES

“Regulations for performance checks of ventilation system, OVK,” issued by the Swedish Board of Housing, Building and Planning, 2009, www.boverket.se.

“The Swedish code of statutes SFS 1991:1273, compulsory ventilation checks”, article issued by the Swedish Board of Housing, Building and Planning, W. Rydholm, 2003.