

EPBD issues in relation to IAQ and ventilation and article 19a feasibility study

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EPBD 2002 - Article 4

“These requirements shall take account of general indoor climate conditions, in order to avoid possible negative effects such as inadequate ventilation, as well as local conditions and the designated function and the age of the building.”

EPBD 2002 – Annex

General framework for the calculation of energy performance of buildings

The methodology of calculation of energy performances of buildings shall include at least the following aspects:

- thermal characteristics of the building (shell and internal partitions, etc.). **These characteristics may also include airtightness;**
- heating installation and hot water supply, including their insulation characteristics;
- air-conditioning installation;
- **ventilation;**
- built-in lighting installation (mainly the non-residential sector);
- position and orientation of buildings, including outdoor climate;
- passive solar systems and solar protection;
- **natural ventilation;**
- **indoor climatic conditions**, including the designed indoor climate.

EPBD 2010 – Annex

General framework for the calculation of energy performance of buildings

The methodology shall be laid down taking into consideration at least the following aspects:

- (a) the following actual thermal characteristics of the building including its internal partitions:
 - (i) thermal capacity;
 - (ii) insulation;
 - (iii) passive heating;
 - (iv) cooling elements; and
 - (v) thermal bridges;
- (b) heating installation and hot water supply, including their insulation characteristics;
- (c) air-conditioning installations;
- (d) natural and mechanical ventilation which may include airtightness;**
- (e) built-in lighting installation (mainly in the non-residential sector);
- (f) the design, positioning and orientation of the building, including outdoor climate;
- (g) passive solar systems and solar protection;
- (h) indoor climatic conditions**, including the designed indoor climate;
- (i) internal loads.

EPBD 2018 – Annex 1

The energy needs for space heating, space cooling, domestic hot water, ventilation, lighting and other technical building systems shall be calculated **in order to optimise health, indoor air quality and comfort levels defined by Member States at national or regional level**

EPBD 2018 – Article 19a

Feasibility study

The Commission shall, before 2020, conclude a feasibility study, clarifying the possibilities and timeline to introduce

- the inspection of stand- alone ventilation systems and
- an optional building renovation passport that is complementary to the energy performance certificates, in order to provide a long-term, step-by-step renovation roadmap for a specific building based on quality criteria, following an energy audit, and outlining relevant measures and renovations that could improve the energy performance.

Inspection of ventilation systems

Following Article 19a of the EPBD Directive 2018/844/EU, this study will assess the relevance and feasibility to introduce EU provisions for the inspection of stand-alone ventilation systems in buildings.

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Building renovation passport

Following Article 19a of the EPBD Directive 2018/844/EU, this study encompasses an assessment of the relevance and feasibility of introducing an EU approach (either voluntary or mandatory) to the concept of building renovation passport.

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Objectives of this study:

- **Analysis of the stock of ventilation systems in EU buildings**
 - including their technical characteristics, the distribution systems and foreseen evolution of the stock.
- **Review of existing regulations, schemes, guidelines and standards on the inspection of ventilation systems**
 - and other relevant initiatives and projects, in the EU, and, where relevant, in other regions.
- **Investigation of relevance and feasibility of further promoting the inspection of stand-alone ventilation systems in buildings at the EU level**
 - and an exploration of the possible approaches to this end, including non-legislative and legislative measures, also in relation to EPBD Articles 14-15.

The relevant work is organised around 3 tasks of the EPBD 19a feasibility study:

- **TASK 1** - Review of regulations, guidelines and standards on the inspection of stand-alone ventilation systems.
- **TASK 2** - Analysis of the relevance, feasibility and possible scope of measures at EU-level for the inspection of stand-alone ventilation systems.
- **TASK 3** - Selection of policy options for inspections of stand-alone ventilation systems and analysis of related potential impacts.

Inspection of stand alone ventilation systems: Whole range of choices...

• Which performances?

- Air flows
- Energy performance aspects
- Acoustics
- Maintenance & cleanliness
- ...

• Which requirements?

- To measure accurately the performances?
- To make the installation compliant with the requirements?
- Minimum energy requirements?
- ...
- Specific procedures for smart systems?
- ...

Inspection of stand alone ventilation systems: Whole range of choices...

- **Building type**

- Individual dwellings
- Collective residential installations
- Non-residential buildings
- ...

- **Status of building**

- New construction
- Existing building
- Moment of transaction
- Moment of (major) renovation

Inspection of stand alone ventilation systems: Whole range of choices...

• By who?

- Third party accredited inspection body
- Independent person
- Person involved in the project
- ...

• Sanctions or rewards?

- Nothing
- Installation must be made compliant
- Financial penalty
- Subsidy if compliant
- ...

Inspection of stand alone ventilation systems: Whole range of choices...

- Minimum: no requirement at all
- Requirement to collect data
- Education... training
- Education ... training with examination ... certification
- Whole range of inspection protocols

Stakeholders opinions are very important

- Survey in the next weeks
- 1st stakeholders meeting on June 24 in Brussels
- 2nd stakeholders meeting in November



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Your opinion matters!

Throughout the study, The European Commission and the consortium contributing to this study are committed to engage with stakeholders to collect their input and viewpoints and to consider their feedback regarding the possible study results.

[Register your interest in the feasibility study stakeholder engagement here](#)

Presentations in the morning sessions

- The context in **France** that lead to the French task force on ventilation
 - The context of the **UK** and recent studies into ventilation effectiveness
 - Inspection of ventilation systems **outside Europe**
 - The context in **Ireland** - changes to Irish regulations and inspection of ventilation systems
 - Ventilation and building airtightness inspection schemes in **Belgium**
 - Ventilation inspection schemes in **France**
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- Ductwork airtightness - why should we care and how to control it - a review



Towards compliant building airtightness and ventilation systems

AIVC Contributed Report 16



This report was produced in collaboration with  QUALICheck

Authors

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<i>Technology</i> Ventilation and airtightness	<i>Aspect</i> Quality of the works	<i>Country</i> France
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BUILDING REGULATIONS CAN FOSTER QUALITY MANAGEMENT: THE FRENCH EXAMPLE ON BUILDING AIRTIGHTNESS

The French regulation includes an alternative route to systematic building airtightness testing to justify for a given airtightness level. This route was developed to push professionals to revisit their methods for implementing building airtightness solutions and to include specific quality requirements. At the end of 2014, 81 such quality management approaches have been approved representing a production of about 15.500 buildings per year.



Authors

François Durier (CETIAT), Laure Mouradian (CETIAT), Fabrice Lamarre (Unielim)

FRENCH VOLUNTARY SCHEME FOR HARMONISED PUBLICATION OF VENTILATION PRODUCT DATA

Country
France

FRENCH VOLUNTARY SCHEME FOR HARMONISED PUBLICATION OF VENTILATION PRODUCT DATA

REGULATORY COMPLIANCE CHECKS OF RESIDENTIAL VENTILATION SYSTEMS IN FRANCE

Author

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<p><i>Technology</i> Transmission characteristics Ventilation & airtightness</p>	<p><i>Aspect</i> Quality of the works</p>	<p><i>Country</i> Sweden</p>
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AMA - GENERAL MATERIAL AND WORKMANSHIP SPECIFICATIONS

AMA (General material and workmanship specifications) has been used in Sweden for more than sixty years. The different parts of AMA are used as reference documents in technical specifications. Between 90 and 95% of all building projects in Sweden refer to AMA in the contract documents.

Authors

Samuel Caillou, Paul Van den Bossche (BBRI)

Technology Ventilation	Aspect Compliance frameworks	Country Belgium
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BELGIAN/FLEMISH EVALUATION SCHEME FOR VENTILATION SYSTEMS

Since many years, several monitoring studies have shown that the quality and compliance of installed ventilation systems can be low. The recently developed Evaluation scheme in Belgium tries to tackle this problem, thanks to the mandatory Ventilation Performance Report of all new ventilation installations, to be delivered by a Ventilation Reporter recognised by a Third-Party control organisation. This factsheet describes the approach of this scheme, including the penalty scheme and the role of the actors involved.

Authors

Clarisse Mees (BBRI)

Technology	Aspect	Country
ALL	Compliance frameworks	Belgium

BELGIUM/FLEMISH REGION CONTROL AND PENALTY SCHEME OF THE ENERGY PERFORMANCE LEGISLATION: CHECKING PROCEDURE AND FINES

Former studies showed that that the legislation is not respected if it is not combined with an operational control scheme. That is why in Belgium, a checking procedure, including on-site control, was implemented with the introduction of the Energy Performance legislation for new buildings. This fact sheet describes the checking procedure, including the penalty scheme and the role of the actors involved. It also gives some examples of the amount of the fines applicable in specific cases.

How penalisation is done...

- There is a requirement for each room
 - Example: bathroom: 50 m³/h
 - If measurement result is 40 m³/h: fine of $(50-40) * 4 \text{ €} = 40 \text{ €}$
- The government does NOT require to achieve a ventilation installation which complies with the requirements
- It is clear that many clients will ask a compliant ventilation system

Authors

Clarisse Mees, Xavier Loncour (BBRI)

Technology Airtightness and ventilation	Aspect Status on the ground	Country Belgium
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QUALITY FRAMEWORK FOR RELIABLE FAN PRESSURISATION TESTS

Airtightness performance of the building has a significant weight in the Belgian EPB-calculation and the number of pressurisation tests in new buildings is strongly increasing. To face the potential lack of tester's skills and to ensure a reliable value, a quality framework has been achieved according to which testers have to pass an exam and could be controlled. This factsheet describes the relevant quality framework and its context.

Authors

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Technology	Aspect	Country
Building air leakage	Status on the ground	All focus countries

BUILDING AIR LEAKAGE RATE IN ENERGY CALCULATION AND COMPLIANCE PROCEDURES

Building air leakage rate is taken into account in energy calculations, but mainly with default tabulated values. With tabulated values, there is an option to use measured values instead of more conservative tabulated values. Regarding compliance, usually there is no requirement to measure and verify the building air leakage rate (except in France).



Source book on Guidelines for better enforcement of quality of the works

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www.qualicheck-platform.eu



Technical procedures to obtain and prove quality of the works

There should be clear procedures what must be done

Figure 1: The three step QUALICHeCK approach to an enforcement framework for a better quality of the works

Conclusions

- There is a lot of interest in the real performances of ventilation systems
- Various countries are actively working on the implementation in practice of quality measures
- The revised EPBD specifies a feasibility study to be finalised before the end of 2019

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