



Brussels, Belgium
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International Workshop

Securing the quality of ventilation systems in residential buildings: status and perspectives

Workshop Conclusions

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Workshop objectives

Questions

- What is the knowledge regarding the quality of ventilation systems in residential buildings in various countries?
- What is the status with existing approaches to improve the quality of these systems?
- What can we learn from targeted efforts to characterize or monitor real ventilation system performance?
- How can quality frameworks help improve the situation and how can they converge with existing regulations or programmes?

Objectives

- To discuss pros and cons of existing approaches
- To explore ways to improve the situation with key experts from various countries.

Quality of ventilation systems?

Compliance to legal requirements:

- Supplied and extracted air flow rates
- Acoustical comfort

More

- Energy performance
- Thermal comfort
- Tightness
- Ease to use and operate
- Cleanliness supply air
- Cleanability – maintainability
- Fire safety
- Reliability
- ...

(Almost) everything is there

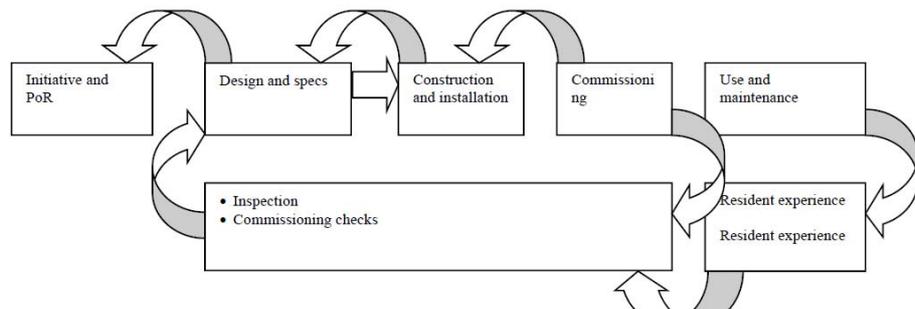
- Ventilation standards
 - In most countries part of building code or EPBD regulation
- Performance requirements
 - Air flow rates, noise, comfort
- Product and system standards
 - Product databases and labels
- Design and installation guidelines
- Testing and compliance standards and guidelines
- Educational and qualification programmes for installers
 - On voluntary basis
- Certification programmes
 - On voluntary basis

Still major quality problems

- Large gap between performance 'on paper' and reality
- Main problems:
 - Insufficient flow rates
 - Poor balancing of flow rates
 - Noise
 - Poor quality supply air
 - Suboptimal operation
 - ...
- Related to:
 1. Poor installation
 2. Lack of maintenance
 3. Poor design
 4. (Poor quality products)

Causes of problems

- Lack of collaboration and continuity at different stages of design and construction
- Lack of knowledge, awareness and care for quality at different stages
- Savings on investments: lack of willingness to pay for quality
- Lack of training of specific installers and commissioners, no training requirements
- Limited enforcement of legislation



Product and system improvements

- Labelling and classification of products
 - Beyond energy performance and flow characteristics
 - Eg. Cleanliness (Finland)
 - Eg. Hygiene, Acoustic qualified (Germany)
 - Uniform schemes across EU?
- Innovations towards system quality
 - Beyond product performance
 - Advanced controls and central processing units
 - Auto calibration
 - User feedback
 - Attractive and clever solutions, also for renovation

Process improvements

- Compliance checks on site
 - Visual checks, descriptive guidelines
 - Performance testing
 - Measuring guidelines, accuracy/ repeatability of tools
 - Health benefits and costs of commissioning
 - Completion certificates, declarations of conformity
- Training programmes
 - Degree for installers of ventilation, degree for testers, degree for maintenance and cleaning personnel,...
- Support from system suppliers
 - Share responsibility
 - From sales support to commissioning support
 - Improved installation and user manuals

Drivers for better quality

- Benefits should be clear:
 - Relate quality aspects (balancing, tightness,...) to improved energy performance in legislation
 - Product labels, installer degrees,...
- End user concerns
 - Health, comfort
 - Pay final term when actual performance is demonstrated
- Legal requirements
 - Minimum of enforcement is necessary or nothing happens...
 - Maintenance and inspection schemes
 - At predefined intervals

Discussion points

- Availability of quality documents and specifications not sufficient to achieve quality in practice
- Certification as solution?
 - Self-declared schemes vs 3rd party certification
 - Product vs process certification
 - Problem: additional to all other EU certification schemes?
- How far should legislation go to support quality?
 - Mandatory training requirements?
 - Mandatory commissioning by independent entity?
 - Compulsory or voluntary certification schemes?
 - Enforcement by authorities?
 - Checks, fines,...



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Thank you for your attention
and participation!