

Foreword

Step by step, the European regulatory landscape continues to evolve as well as the airtightness market. Some facts illustrate this trend:

- over 100 000 airtightness tests are performed every year in France;
- hands-on airtightness training courses for designers and craftsmen are successful;
- several laboratory or field investigations address the durability of airtightness;
- specific schemes have been developed to increase confidence in airtightness test results in 8 countries.

We have selected some initiatives in this newsletter illustrating these facts. We wish you a pleasant reading and hope you will be able to join us for our future webinars (free of charge), workshops and conferences (see our Events Calendar on page 4).

The TightVent team



Recent Belgian developments on quality frameworks for airtightness

The Flemish, Brussels and Walloon regions of Belgium have introduced the airtightness of buildings determined by fan pressurization tests in their regional Energy Performance (EP) regulations. Airtightness testing is not mandatory; however, when using the result of an airtightness test instead of the default air permeability value (for heating calculation) $\dot{v}_{50} = 12 \text{ m}^3 / (\text{h m}^2)$, a substantial improvement in energy performance can be achieved.

To monitor and evaluate their schemes, the regions have developed databases with final EP declarations and have produced statistics regarding the airtightness of buildings.

Figure 1 shows the rapidly growing percentage of final EP declarations that include measured air permeability of buildings in the Flemish Region since 2006. In 2012,

58% of the EP declarations did not use the default value—i.e., in those cases, an airtightness test had to be performed to justify for the airtightness level mentioned in the declaration—whereas this percentage was only 2% in 2006.

In addition, as of January 2015, it will be mandatory in Flanders to be qualified to perform tests in the context of the EPBD regulation.

* [The air permeability (\dot{v}_{50}) is equal to the mean air leakage at 50 Pa (\dot{V}_{50}) divided by the envelope area of the building based on external dimensions;

In the Walloon region, the average air permeability is $2.9 \text{ m}^3 / (\text{h m}^2)$ while in the Flemish region $3.7 \text{ m}^3 / (\text{h m}^2)$.]

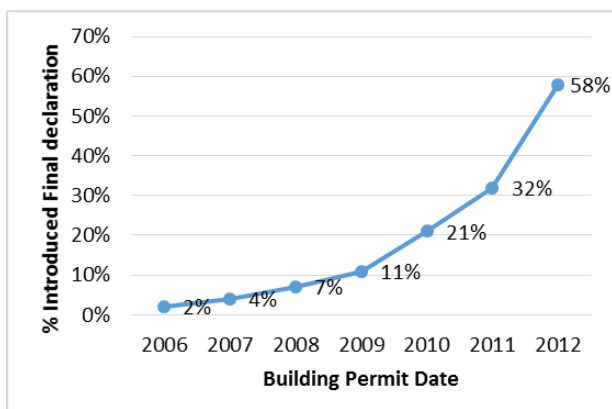


Figure 1: In the Flemish Region, the percentage of final EP declaration including measured air permeability of buildings (residential, offices and schools) is increasing since 2006

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35th AIVC- 4th TightVent Conference Updates

Around 150 participants attended the joint 35th AIVC - 4th TightVent - 2nd venticool conference held in Poznań, Poland September 24-25, 2014. The programme consisted of 3 parallel sessions with contributions from 27 countries and international organizations.

Over 100 presentations were given covering topics ranging from air infiltration through leaks in the building envelope and ductwork, ventilation in relation to IAQ and health, ventilative cooling and thermal comfort.

It has also been a major discussion place for on-going projects and initiatives such as the QUALICHECK project and platform (www.qualicheck-platform.eu), the TightVent Europe and venticool platforms, the newly formed Indoor Environmental Quality – Global Alliance (<http://ieq-ga.net/>), the IEA EBC annex 62, etc., based on presentations of results and perspectives as well as fruitful interactions with the audience.



Specific sessions dealing with airtightness included:

- Quality issues in airtightness testing
- Durability of airtightness
- Ductwork airtightness in new and renovated buildings

We received positive informal reactions from the attendees which were confirmed by the positive feedback extracted from the analysis of the questionnaires (Figure 2, Figure 3).

More information will follow soon on our website including a summary of the airtightness track, so stay tuned at: <http://tightvent.eu/>

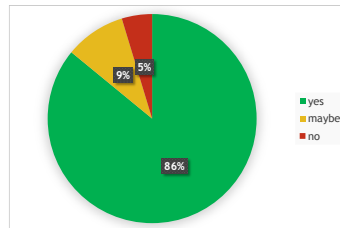


Figure 2: Would you recommend this conference to others?

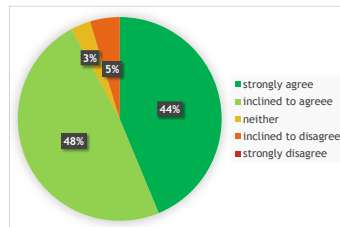


Figure 3: The content of the conference sessions was appropriate and informative

Accuracy of multi zone air leakage measurements

Researchers at Lawrence Berkeley National Laboratory have investigated the accuracy of using fan pressurization methods to determine leakage between adjacent zones, based on field measurements and simulations and comparing the uncertainty for the different measurements and calculation methods. The study also involved the determination of the impact of two common sources of uncertainty

(pressure fluctuations in the different units & interconnected zones that are not pressurized during the test) to zone-to-outside leakage test results using the guarded zone test method.

The study suggests that selecting appropriate test and calculation methods can reduce uncertainty below 25% when using fan pressurization to determine the leakage between adjacent zones. Furthermore, the results point out that care should be taken when interpreting the results of guarded leakage tests in multi-zone buildings so as not to overestimate the possible energy wastage due to leakage directly to the outdoors.

Download the full article at:

<http://eetd.lbl.gov/sites/all/files/lbnl-6582e.pdf>

September 23-24, 2015: 36th AIVC conference, Madrid, Spain

The 36th AIVC conference: 'Effective ventilation in high performance buildings' will be held in the city of Madrid, Spain together with the 5th TightVent and the 3rd venticool conferences in September 23-24, 2015. It will be a major international event in 2015 focusing on various topics relevant to ventilative cooling, airtightness, IAQ and health, as well as compliance, smart control, and BIMs (see full list of topics on: <http://tightvent.eu/archives/2123>).

This conference is organised by:

- the International Network on Ventilation and Energy Performance ([INIVE](http://www.inive.org)) on behalf of the Air Infiltration and Ventilation Centre ([AIVC](http://www.aivc.org)), TightVent Europe (the Building and Ductwork Airtightness Platform), [venticool](http://www.venticool.org) (the international platform for ventilative cooling); and
- The Eduardo Torroja Institute for Construction Science – ([IETcc-CSIC](http://www.ietcc-csic.org))

Registration and programme information will follow soon so stay tuned on: <http://tightvent.eu/>.

March 16-17, 2015: QUALICHeCK workshop, Lund, Sweden

Although ventilation and airtightness are covered in most countries by various regulations focussed on energy performance and/or indoor air quality, the effectiveness of these regulations is often called into question. A number of studies have shown significant deviations between assumed and actual characteristics of the building or equipment, possibly resulting in non-compliance to the regulation and/or degraded performance.

The principal objective of this workshop is to discuss and identify ways to reduce these deviations with or without regulatory measures, thereby increasing the confidence in declared values of documents produced to show compliance with the regulations.

Three aspects will be more specifically addressed:

- 1) how to improve the reliability of the input data used to issue Energy Performance certificates;
- 2) how to improve the quality of the works;
- 3) how to take into account innovations in a compliance framework.

The workshop discussions will be based on detailed presentations of schemes that are operational or under development to address those issues. In addition, specific interactive sessions will be devoted to collaborative work.

The workshop is organized by INIVE on behalf of the [QUALICHeCK](#) consortium; [AIVC](#) (Air Infiltration and Ventilation Centre); [TightVent](#) (Building and Ductwork Airtightness Platform); [venticool](#) (the international platform for ventilative cooling).

More information soon available on the QUALICHeCK (<http://qualicheck-platform.eu>) and TightVent websites (www.tightvent.eu).

November 20, 2014: Webinar on “Competent tester schemes in Denmark, Ireland and Sweden”

Over the past few years, there has been an increasing number of airtightness tests performed in Europe either for specific high-performance buildings programmes or for a wide range of buildings in regulatory contexts. This has led to the development of competent tester schemes to contain potential legal and competition issues. The objective of this webinar is to give information on the status and trends in airtightness testing in Denmark, Ireland, and Sweden including the details and feedback on competent tester schemes.

The webinar will be held on November 20, 2014 at 10:00 AM (Brussels time).

The programme includes 4 presentations of 20 minutes as follows:

- *Introduction and overview of TightVent Air Tightness Associations Committee*, François Rémi Carrié
- *Status in Denmark and Klimaskaerm's certification for airtightness testers*, Walter Sebastian, Klimaskaerm, Denmark
- *Status in Ireland and NSAI's Certified Air Tightness Tester Scheme*, Mark A. Shirley, 2evia.ie, Republic of Ireland
- *Status in Sweden and its new diploma for airtightness testers*, Eva Sikander, SP, Sweden
- *Performance of airtightness solutions and products*, Filip Van Mieghem, Soudal

Participation to the webinar is **free**, but requires you to register for the event. For more information on registration please visit: www.tightvent.eu.

This webinar is organized with the support of TightVent Europe (www.tightvent.eu) and AIVC (www.aivc.org). Both initiatives are

facilitated by INIVE (www.inive.org). It is the 3rd webinar organized on the topic of competent tester schemes. The two first webinars of this series addressed the situation in Belgium, Czech Republic, France, Germany and the United Kingdom.

For more information on past webinars, visit: <http://tightvent.eu/events/past-webinars>.

Recent developments in TAAC

In September 2012, TightVent Europe set up the TightVent Airtightness Associations Committee ([TightVent TAAC committee](#)) aiming to bring together airtightness testers associations with the primary goal to promote reliable testing and reporting procedures. Since then, the committee has met nine times via internet and held two physical meetings, one in Hannover on June 6, 2013 (before the 8th International BUILDAIR Symposium) and in Poznan on September 23, 2014 (before the 35th AIVC-4th TightVent-2nd venticool joint Conference). At present the participants (TAAC [members](#) and [guests](#)) are from Belgium, Canada, Croatia, Czech Republic, Denmark, Estonia, France, Germany, Hungary, Ireland, Latvia, Norway, Poland, Sweden, UK and the US.

The scope of the committee includes various aspects:

- airtightness requirements in the countries involved
- competent tester schemes in the countries involved
- applicable standards and guidelines for testing
- collection of relevant guidance and training documents

As of today, TAAC has produced several studies ranging from comparisons of competent tester schemes, building preparation guidelines and airtightness testing costs, to reviews of airtightness

requirements and applicable existing standards. Results of these studies are communicated between TAAC members and guests and presented in AIVC-TightVent conferences and workshops.

In case you have interest to obtain further information and/or join us, please write an email to info@tightvent.eu.

Hands-on training for designers and craftsmen in France

The new French regulation (RT 2012, fully operational since January 2013) requires that the building airtightness of all new residential buildings be justified. This has led to over 100 000 tests performed every year, and of course, pressure on designers and craftsmen to address this issue.

Because building airtightness entails practical challenges difficult to understand only in theoretical courses, several initiatives have grown to teach professionals how to achieve good airtightness in practice on building parts (windows, wall interfaces, duct penetrations, etc.). In France, 38 PRAXIBAT® platforms (see [map](#)) specifically dedicated to hands-on training on opaque walls for workers and craftsmen and including airtightness issues exist or are under development. Several other officially recognized training platforms have been operational for some time already (see photo).

TightVent intends to make an inventory of educational activities in Europe in the coming months. If you are aware of such initiatives, please inform us at info@tightvent.eu.

"Our training allows craftsmen to propose services eligible for fiscal incentives and therefore be more competitive. We have trained more than 350 craftsmen and architects in 2013. The demand continues to grow fast: we foresee an increase of trainees by a factor 4 in 2014!" says Andrés Litvak, Director of CDPEA (www.cdpea.fr).



Events Calendar

- **November 20, 2014:** TightVent webinar on 'Airtightness testing: status and trends in competent tester schemes in Denmark, Ireland and Sweden. More information on: <http://tightvent.eu/archives/2133>.
- **March 16-17, 2015:** QUALICheck workshop on ventilation and airtightness, Lund, Sweden.
- **September 23-24, 2015:** 36th AIVC-5th TightVent-3rd venticool joint conference in 2015 in Madrid, Spain on "Effective ventilation in high performance buildings". More information on: www.aivc.org.
- **May 8-9, 2015:** 9th International BUILDAIR-Symposium "Airtight Buildings, Thermography and Ventilation Systems in Practice" in 2015 in Kassel, Germany. More information on: http://www.buildair.de/images/stories/9BUILDAIR_Call1_en1.pdf.

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