TightVent Europe
BUILDING AND DUCTWORK AIRTIGHTNESS PLATFORM

June 2023

Newsletter No 24

Foreword

Welcome to the June 2023 issue of the TightVent Europe newsletter!

The date of the 11th TightVent- 43rd AIVC & 9th venticool joint conference is now approaching very quickly. The conference programme will include, among others, 2 topical sessions dedicated to airtightness, namely: “Revise ISO 9972 to improve the reliability of airtightness measurements” & “Status of building and ductwork airtightness in various countries” as well as various presentations on the topic from the call for abstracts. We hope to see you there!

In this edition we also share information on the recent AIVC Workshop “Towards high quality, low-carbon ventilation in airtight buildings” held on May 18-19 in Tokyo, Japan and announce our upcoming webinar “Alternative methodologies to evaluate airtightness” to be held on June 19th; if you haven’t registered yet, we encourage you to do so! Since our last newsletter communication of November 2022, we have also published 5 Ventilation Information Papers on Trends in building and ductwork airtightness; keep on reading to learn more!

Please visit our website, follow us on twitter and LinkedIn and read to our monthly newspaper "Energy Efficiency and Indoor Climate in Buildings" to find out more about our activities. We wish you a pleasant reading!

The TightVent team

19 June 2023 (10:00 – 11:30 CET) | AIVC & TightVent Webinar – Alternative methodologies to evaluate airtightness

A pressurization test with a blower door fan is the most widely accepted and used method to evaluate the airtightness of a building, but it presents some drawbacks. Alternative methodologies have been, or are being, developed and three of them are presented in this webinar:

1. The Low Pressure Pulse technique (LPP), which is a dynamic measurement of building air leakage at a low pressure differential (4Pa). It is based on the release of a “pulse” of air and the measurement of the decay in building pressure over a few seconds.
2. The Air Tightness Tester (ATT) that uses the ventilation system in the house. By switching it on and off, the airtightness can be calculated from the measured changes of pressure and the volume flow rate.
3. A method that is under development combines IR and acoustic approaches to locate air leakage paths.

This webinar is organised with the support of the Air Infiltration and Ventilation Centre and TightVent Europe. Both initiatives are facilitated by INIVE.

Programme

- 10:00 | Introduction to alternative methodologies used to evaluate airtightness, Benjamin Jones (University of Nottingham, UK)
- 10:05 | The pulse technique, Christopher Wood (University of Nottingham, UK) and Luke Smith (Build Test Solutions, UK)
- 10:20 | Questions and answers
- 10:30 | The Air Tightness Tester (ATT), Niek-Jan Bink (ACIN, The Netherlands)
- 10:45 | Questions and answers
- 10:55 | Novel IR and acoustic methods, Benedikt Kölsch (Cerema/DLR, France)
- 11:10 | Questions and answers
- 11:30 | End of webinar

Participation to the webinar is FREE but requires you to REGISTER for the event.
For further information please download the flyer.

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4 - 5 October 2023 –11th TightVent- 43rd AIVC - 9th venticool conference in Copenhagen, Denmark

The 11th TightVent conference: "**Ventilation, IEQ and health in sustainable buildings**" will be held in Copenhagen, Denmark together with the 43rd AIVC and the 9th venticool conferences on October 4-5, 2023. The conference will take place at Aalborg University Copenhagen.

Conference Scope

As we spend most of our time in commercial and residential facilities, it is important for our society to look at how these spaces impact the environment and the people in them. This task is important for building and facility managers, maintenance managers, energy managers as well as expert and researcher concerned with adopting sustainable and healthy practices for an organization.

From indoor environmental quality point of view, sustainable buildings prioritize the quality of life and the wellbeing of the buildings' occupants and at the same time reduce negative environmental impacts. A building that, in its design, construction or operation, reduces negative impacts on our climate, also reduces their occupants' risk of related health problems and provides a more pleasant indoor environment, as well as increases occupants' satisfaction.

Conference concept

The conference will consist of 3 parallel sessions largely devoted to:

- Smart ventilation, Indoor Air Quality (IAQ) and health
- Building and ductwork airtightness
- Ventilative cooling – Resilient cooling

The conference will consist of a mixture of presentations from the call for papers and presentations upon invitation, organized in well prepared and structured sessions focused on the conference theme and topics. Some sessions will consist of presentations from the call for papers only, other sessions will be topical sessions with presentations proposed by a session organizer and by the organizing committee. The conference is combined with an exhibition by industry partners.

Conference topics:

Building and ductwork airtightness

- Role of airtightness in building decarbonization and epidemic preparedness
- Energy and IAQ impact of envelope and ductwork leakage
- Innovative measurement and airtightness techniques
- Compliance schemes
- Long-term performance: durability of airtightness
- EPBD revision and impact on ventilation and IAQ
- Circular economy, sustainability, and green buildings

Smart ventilation, IAQ and health

- Role of ventilation in building decarbonization and epidemic preparedness
- Ventilation reliability: performance verification and durability
- IAQ impacts from outdoor pollutants, indoor cooking and combustion
- Combining ventilation and air cleaning for acceptable IAQ
- The role of consumer IAQ sensors
- Model based data analytics and control strategies for smart ventilation
- Building Information Modelling (BIM), Life Cycle Assessment (LCA) for ventilation and building services
- EPBD revision and impact on ventilation and IAQ
- Inspection, monitoring and maintenance of ventilation systems
- Circular economy and sustainability, green buildings

Ventilative cooling – Resilient cooling

- Role of ventilative and resilient cooling in building decarbonization and epidemic preparedness
- Ventilative and resilient cooling in a changing climate
- Implementation in standards, legislation, and compliance tools
- Control strategies and personal comfort control
- EPBD revision and impact on ventilation and IAQ

Conference Organizers

The conference is an initiative from:

- the International Network on Ventilation and Energy Performance (INIVE) on behalf of the Air Infiltration and Ventilation Centre (AIVC), TightVent Europe (the Building and Ductwork Airtightness Platform), and venticool (the international platform for ventilative cooling); and
- Aalborg University in Copenhagen

For more information, please visit the conference website at: https://aivc2023conference.org/

Feedback from the "Airtightness" session at the AIVC Workshop, in Tokyo, "Towards high quality, low-carbon ventilation in airtight buildings"

The AIVC 2023 workshop "Towards high quality, low-carbon ventilation in airtight buildings" organized in collaboration with NILIM and BRI of Japan was held on 18-19 May 2023 in Tokyo, Japan.

Participation was possible online and in person and the event drew over 100 participants - researchers, engineers & architects, industry representatives

and international organizations from 16 countries.

The programme included 30 presentations grouped into 5 sessions: “Opening”, “IEA-EBC Annexes”, “Quality assurance of ventilation and heat recovery systems”, “Airtightness” & “Role of ventilation in infection control”.

The airtightness session at the workshop consisted of 7 presentations; it dealt with the promotion of airtightness, measurement issues and durability.

Towards a better airtightness.

Kiyoshi Hiwatashi (Taisei Corporation, JP) presented a “Proposal to promote airtightness in non-residential buildings in Japan”. While a few years ago lots of new residential buildings were being tested in Japan, there is now no requirement on tests at commissioning as it is estimated to be too complicated and costly compared to the energy savings associated to the Japan’s climate.

Valerie Leprince (Cerema, FR) presented trends in building and ductwork airtightness in different countries. This presentation was a summary of 7 Ventilation Information Papers published by the AIVC on national trends regarding airtightness. This presentation showed that in some countries almost all new (residential) buildings are now tested and pointed out a need for a reliable protocol for airtightness test that allows to perform the test in any condition and provide repeatable results.

Measurement issues

As stressed above, the reliability of test is necessary when airtightness tests become obligatory; however, ISO 9972 has several issues which were highlighted by Benedikt Koelsch (Cerema, FR) in his presentation “ISO 9972: An overview of difficulties with the current standard”. An on-going project in Cerema aims at improving the standard, making it more reliable, more repeatable and usable in any conditions including testing high and large buildings.

This specific subject of airtightness testing of large buildings was addressed in the presentations of Takashi Hasegawa (Eikan-Shoji, JP) “Airtightness of large buildings in Japan: current situation and a proposal for the future” and Iain Walker (LBNL, USA) “Airtightness testing of large buildings”.

Yuichi Takemasa (Kajima Technical Research Institute, JP) in his presentation “Measurement for exterior wall airtightness of high-rise buildings using stack effect/individual air conditioning and outdoor air entering through entrance doors” proposed a smart method to evaluate airtightness of high-rise buildings using natural stack force. The method consists of measuring the pressure difference between inside and outside in different heights (from bottom to top) and to open a door (with a known size) at the bottom and then close it to open one at the top. The shift of the pressure along the height of the building allows to calculate the leakage area (assuming an equal repartition of leakage on each floor).

Durability of building airtightness

Having requirements on new building airtightness only makes sense if the airtightness lasts in time. Valérie Leprince (Cerema, FR) presented the AIVC Technical note TN71: Durability of building airtightness to summarize studies performed on this subject both in laboratory and through on site measurements. Main conclusion was that in some cases airtightness deteriorates during the 2 first years after completion and then tends to stabilize (a deterioration of 20% is observed in average); nevertheless, reasons behind this deterioration are still under investigation.

The recordings and slides of the workshop are now available online here.

New publications

The AIVC has recently released 5 publications in collaboration with TightVent & TAAC.

AIVC’s Ventilation Information Paper no 45.3: Trends in building and ductwork airtightness in the Czech Republic (December 2022).

This paper summarizes current knowledge on trends in building and ductwork airtightness in the Czech Republic.

AIVC’s Ventilation Information Paper no 45.4: Trends in building and ductwork airtightness in Belgium (January 2023).

This paper summarizes current knowledge on trends in building and ductwork airtightness in Belgium.

AIVC’s Ventilation Information Paper no 45.5: Trends in building and ductwork airtightness in Latvia (January 2023).

This paper summarizes current knowledge on trends in building and ductwork airtightness in Latvia.

AIVC’s Ventilation Information Paper no 45.6: Trends in building and ductwork airtightness in France (January 2023).

This paper summarizes current knowledge on trends in building and ductwork airtightness in France.

AIVC’s Ventilation Information Paper no 45.7: Trends in building and ductwork airtightness in Greece (May 2023).

This paper summarizes current knowledge on trends in building and ductwork airtightness in Greece.

All documents are freely accessible at: https://www.aivc.org/resources/collection-papers/volume/ventilation-information-papers-0

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Partners

Product news as provided by our partners

Retrotec's DM32X Gauge Officially Released

Meet Retrotec's DM32X gauge, the next generation in airtightness testing. This refreshing new testing experience will open new doors and extend your diagnostic abilities.

New Features

- ✓ Beautiful large 1080P HD OLED Display with Gorilla Glass capacitive multi-touch.
- ✓ A thinner, more ergonomic shell design.
- ✓ Built-in testing and training apps.
- ✓ Embedded & online manuals, videos, & resources.
- ✓ Real-time graphic display of pressure readings over time. Taking pressure points is one thing, being able to see what's happening tells you a more accurate story.
- ✓ Multiple datalogging options.
- ✓ Digital Signal Processing (DSP) improves pressure reading stability.
- ✓ Fast 3A charging & data transfer on USB-C Bluetooth® connectivity.
- ✓ Photorealistic images of all devices and ranges.

For more information, please visit: www.retrotec.com

Putting an End to Ductwork Leakage: AEROSEAL, the most comfortable and effective solution – for any Building

Leaky ductwork sabotages energy efficiency indoor air quality and acoustics. With AEROSEAL, you can seal leakages (up to 15mm) from the inside out. Recent surveys reported a remarkable average reduction of 93% in ductwork leakage. The benefits are substantial, including enhanced energy efficiency, improved indoor air quality, and noise reduction.

We have successfully applied this solution in over 850 projects across Europe, leveraging our extensive network of 50 partners in 20 countries. But don't just take our word for it. We conducted a comprehensive field experience study, providing real-world insights. Read the study here: https://bit.ly/aeroseal-study

For more information, please visit: https://bit.ly/aeroseal-info

Safer indoor environment with Lindab Fire Rated Duct System

Last month, Lindab introduced a new fire rated duct system, based on the market leading Safe system. The fire rated duct system contains a range of products that have been tested in the harshest environment, in accordance with EN 1366-1 and is classified according to EN 13501-3
The system is developed as a part of Lindab Protect, an extensive range of Lindab products and systems offering greater safety in buildings.
"Fire protection in buildings, and especially in ventilation systems, is an important area for Lindab", says Jesper Karlsson, product manager at Lindab. "We have seen increasing demands and focus from authorities for more reliable fire protection over the last couple of years. This is also why we have increased our offerings and expert knowledge within the field", he says.
For more information, please visit: http://www.lindab.com/

Acin's FlowFinder mk2+

We could not produce FlowFinders for almost half a year but now we can proudly announce a 'new' FlowFinder, the mk2+. All existing FF-mk2's can get this upgrade as well. With the new electronics the FF has now zero pressure compensation over the full range and is much more stable, especially at the higher flows. This is made possible because the measuring frequency has gone up from 2Hz to 50Hz. The FF-mk2 also uses much less energy. The battery is therefore lasting much longer. Other features: the FF now has WiFi over which new firmware can be uploaded by the user. Also, we are building an app. And the on/off function is improved: the FF turns on instantaneously and when turning it off you get a warning to remove the battery. The price for the update is 800 Euros including a calibration.
For more information, please visit: https://acin.nl/en/

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Learn more about TightVent founding partners and new partners.