

Foreword

Welcome to this 14th newsletter of the venticool platform!

A major venticool event is approaching: the 40th AIVC - 6th venticool & 8th TightVent joint conference: "From energy crisis to sustainable indoor climate - 40 years of AIVC" to be held in Ghent on 15-16 October 2019.

Also, you should save the dates for the 41st AIVC- 7th venticool & 9th TightVent Conference on 14, 15 & 16 September 2020 in Athens, Greece.

In this edition, you will also find updated information on the new work items proposed in the European Committee for Standardization (CEN) and International Organization for Standardization (ISO) with regard to ventilative cooling and Natural and Hybrid ventilation systems.

Moreover, we present feedback from recently launched projects: the IEA EBC Annex 80 "Resilient Cooling for Residential and Small Non-Residential Buildings" as well as the EPBD Article 19a feasibility study on the "inspection of stand-alone ventilation systems".

Last but not least, you will be able to test & improve your knowledge on ventilative cooling, through the tutorial developed by the IEA EBC Annex 62 participants.

If you would like to be kept informed, please subscribe to: news.inive.org. Already 750 persons did it before!

We wish you a pleasant reading and look forward to seeing you in our future events!

The venticool team

@venticool



The recently launched IEA EBC Annex 80 on resilient cooling

IEA EBC Annex 80 "Resilient Cooling for Residential and Small Non-Residential Buildings" has been approved for the working period 2019-2023. Its main objective is to support a rapid transition to an environment where resilient low energy and low carbon cooling systems are the mainstream and preferred solutions for cooling and overheating issues in buildings.

The Annex is scheduled to start in July 2019 and end in June 2022. The reporting phase will start in July 2022 and end in July 2023. Annex 80 Expert Meetings will be held every six months.

More specifically:

- The first expert will take place on October 21st & 22nd, 2019 in Vienna, Austria.
- The second meeting will take place on June 15th & 16th, 2020 in Windsor, United Kingdom.
- The third Expert Meeting will take place on October 22nd & 23rd, 2020 in Brisbane, Australia

If you want to know more about the Annex please visit the website <http://annex80.iea-ebc.org/> or contact Peter Holzer, operating agent of EBC Annex 80 at: peter.holzer@building-research.at

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15 -16 October 2019 – 40th AIVC & 6th venticool conference in Ghent, Belgium

The 40th AIVC Conference "From Energy crisis to sustainable indoor climate – 40 years of AIVC" will be held on the 15th and 16th of October 2019 at 'Het Pand', the congress centre of Ghent University in Ghent, Belgium. It will also be the 8th TightVent conference and the 6th venticool conference.

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

- Smart ventilation, Indoor Air Quality (IAQ) and health relationships;
- Airtightness;
- Ventilative cooling - Resilient Cooling.

The conference programme will include well-prepared and structured sessions focused on the conference topics, invited speakers, long and short oral presentations arising from the call, as well as 90 seconds industry presentations.

Confirmed **Topical Sessions** include:

- 40 years of AIVC
- Bedroom ventilation, IAQ and sleep
- Better implementation of ventilative cooling in national (building) standards, legislation and compliance tools
- Controlling moisture for improved IAQ
- EPBD 2018/844/EU Article 19a feasibility study on the "inspection of stand-alone ventilation systems"
- EBC Annex 68 - Design and Operational Strategies for High IAQ in Low Energy Buildings
- EBC Annex 78 - Supplementing Ventilation with Gas-phase Air Cleaning, Implementation and Energy Implications
- EBC Annex 80 - Resilient Cooling
- Integrating uncertainties due to wind and stack effect in declared airtightness results
- Model based control and concepts for ventilation systems
- Performance-based assessment methods for ventilation systems
- What information do we need for occupant-centric building design and operation?

To proceed with your on line registration please visit:
<https://www.aivc.org/40th-aivc>

Early bird registration ends on **30 June 2019!**

For further information and updates visit us at:

<https://www.aivc2019conference.org>

EPBD Article 19a feasibility study on the "inspection of stand-alone ventilation systems"

Article 19a of the EPBD Directive 2018/844/EU requires the European Commission to conduct a feasibility study to identify the need, possibilities and timeline for introducing EU provisions related to the inspection of stand-alone ventilation systems.

The objectives of this study are to deliver:

- An analysis of the stock of ventilation systems in EU buildings, including their technical characteristics, the distribution systems and foreseen evolution of the stock.
- A 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.
- An investigation of the 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 tasks to be carried out within the specific feasibility study are:

- 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.

The feasibility study is explored by a team of acknowledged collaborators under the lead of INIVE EEIG who will provide technical support to the Directorate-General for Energy of the European Commission.

A first stakeholder meeting will take place in Brussels on 24 June 2019, in which preliminary results will be shared and discussed. You can register your interest in the stakeholder engagement activities here.

Moreover, a topical session at the 2019 AIVC Conference to be held on 15-16 October, 2019 in Ghent, Belgium will be organized and structured around the outcomes of the feasibility study.

For further information please visit our website at: www.epbd19a.eu/.

IEA-EBC Annex 62 "Ventilative Cooling" Tutorial

Annex 62 "Ventilative cooling" of the IEA Technology Collaboration Programme "Energy in Buildings and Communities" was an international research project running from 2014 to 2018. The research focus of the annex was on the development of design methods and compliance tools related to predicting, evaluating and eliminating/minimizing the cooling need and the risk of overheating in buildings as well as on the development of new attractive energy efficient ventilative cooling solutions. The main goal was to make ventilative cooling an attractive and energy efficient cooling solution to avoid overheating of both new and renovated buildings.

Annex 62 participants developed a tutorial including questions (& answers) based on the annex deliverables. The tutorial is now available on the combined website of venticool and Annex 62 at: <https://venticool.eu/annex-62-publications/ventilative-cooling-tutorial/>

Ongoing standardization projects on ventilative cooling, and natural & hybrid ventilation systems

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There has been an overall lack of ventilative cooling integration, in existing and revised European standards regarding “system design” and “performance” aspects, and therefore pre work items (PWI's) relevant to ventilative cooling applications were proposed to the European Committee for Standardization (CEN) and International Organization for Standardization (ISO). These PWI's were approved in 2017 and have now started up under CEN/TC 156 and ISO/TC 205 in various working groups.

The new CEN projects have the scope of making technical documents focusing on setting criteria and giving guidance to the design and dimensioning of ventilation systems (natural, mechanical and hybrid) and of ventilative cooling systems.

Ventilative cooling is the use of natural, mechanical or hybrid ventilation strategies to cool indoor spaces using outside air, which reduces the energy consumption of cooling systems while maintaining thermal comfort.

These documents should guide the designers on what to be aware of when designing these systems. There is good development on these projects, with a plan to coordinate among the projects to eliminate overlaps. For example coordination meetings have begun to align main definitions (like airing, hybrid ventilation etc.) across the projects for more optimized upcoming physical meetings and the writing process itself.

The following 3 projects relevant to ventilative cooling applications have started in CEN:

1. Ventilative cooling systems

- Main focus: Thermal comfort (reduce cooling loads and prevent overheating)
- Document type: A CEN Technical Specification
- Work started up in WG/21, CEN/TC 156

2. Natural and hybrid ventilation systems in non-residential buildings

- Main focus: Indoor air quality
- Document type: A CEN Technical Specification
- Work started up in WG/20, CEN/TC 156

3. "Ventilation for buildings – Performance criteria, design and dimensioning of ventilation systems in residential buildings (Revision of EN 15665:2009 and CEN/TR 14788:2006)"

- Main focus: Indoor air quality
- Document type: Goal is to merge both documents into one document (e.g. EN standard)
- Aim is also to expand the sections on Natural and Hybrid ventilation systems
- Work started up in WG/2, CEN/TC 156

And the following project started in ISO:

4. Design process of natural ventilation for reducing cooling demand in energy-efficient non-residential buildings

- Main focus: Thermal comfort (design process to prevent overheating)
- Document type: ISO standard
- Work started up in ISO/TC 205, WG/2

Many of these technical documents are entering a new territory and will be the first of its kind, as no documents are currently available at CEN and ISO level describing how to design ventilative cooling, as well as natural and hybrid ventilation systems, and what to be aware of. The initiated projects are foreseen to be released as CEN European Technical Specifications (normative documents of lower status than EN Standards) and as an EN standard

under CEN/TC 156, with the aim of being released around year 2022 - and of course support but not overlap the content of the EPBD standards [1]. The technical documents are a good opportunity to define the criteria and design aspects of ventilative cooling and natural and hybrid ventilation systems on the European and International scene by applying findings from e.g. the venticool platform [2] and the final deliverables of the IEA EBC Annex 62 reports [3].

[1] <https://epb.center/documents/>

[2] <https://venticool.eu/venticool-publications/reports/>

[3] <https://venticool.eu/annex-62-publications/deliverables/>

Feedback from the AIVC Workshop “Quality ventilation is the key to achieving low energy healthy buildings”, 27-28 March 2019, Dublin

The Air Infiltration and Ventilation Centre (AIVC) together with Sustainable Energy Authority of Ireland (SEAI) organised the workshop "Quality ventilation is the key to achieving low energy healthy buildings" which was held on 27-28 March 2019 in Dublin, Ireland. Around 80 participants attended this 2 days workshop, which provided a wealth of insights from experiences both nationally and internationally, informing approach on ventilation as a key component of delivering both new buildings and deep retrofit low energy buildings. The programme consisted of 23 presentations grouped under two main themes “Ventilation for good indoor air quality (IAQ)” & “Quality of Ventilation Systems”. The slides of the presentations are available at: <https://www.aivc.org/event/27-28-march-2019-symposium-dublin-quality-ventilation-key-achieving-low-energy-healthy>.

IEA-EBC Annual Report 2018 available

The annual report of 2018 of the International Energy Agency's Energy in Buildings and Communities (IEA-EBC) Programme has just been released. This report presents an overview of progress made by the EBC Programme, including summaries of new, ongoing and recently completed projects. The report includes a specific section on the newly launched Annex 80: "Resilient Cooling for Residential and Small Commercial Buildings" as well as the completed Annex 62: "Ventilative cooling".

Specific contents include:

- EBC Executive Committee Chair's Statement
- Introducing the EBC Strategic Plan 2019-2024
- New Research Projects (EBC Annex 80 "Resilient Cooling for Residential and Small Commercial Buildings", EBC Annex 79 "Occupant-centric Building Design and Operation" and EBC Annex 78 "Supplementing

Ventilation with Gas-phase Air Cleaning, Implementation and Energy Implications")

- On-going Research Projects
- Completed research projects (EBC Annex 66 "Definition and Simulation of Occupant Behavior in Buildings", EBC Annex 64 "LowEx Communities - Optimised Performance of Energy Supply Systems with Exergy Principles", EBC Annex 63 "Implementation of Energy Strategies in Communities" and EBC Annex 62: "Ventilative cooling").

For further information please visit IEA-EBC website.

SAVE the date: 14-16 September 2020, Athens, 41st AIVC conference, Greece

The 41st AIVC Conference will be held on 14, 15 & 16 September 2020 in Athens, Greece together with the 9th TightVent conference and the 7th venticool conference. More information will follow so stay tuned.

What is ventilative cooling?

Ventilative cooling refers to the use of natural or mechanical ventilation strategies to cool indoor spaces. This effective use of outside air reduces the energy consumption of cooling systems while maintaining thermal comfort. The most common technique is the use of increased ventilation airflow rates and night ventilation, but other technologies may be considered as well. Ventilative cooling is relevant in a wide range of buildings and may even be critical to realize renovated or new NZEB.

What is venticool?

venticool is the international ventilative cooling platform launched in October 2012 to accelerate the uptake of ventilative cooling by raising awareness, sharing experience and steering research and development efforts in the field of ventilative cooling. The platform supports better guidance for the appropriate implementation of ventilative cooling strategies as well as adequate credit for such strategies in building regulations. The platform philosophy is to pull resources together and to avoid duplicating efforts to maximize the impact of existing and new initiatives.

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