

Welcome

Welcome to this 2nd newsletter of the QUALICHeCK project, which is now at the end of its first year.

A major QUALICHeCK event is the upcoming 1st workshop in Lund, on 16 and 17 March 2015, focusing on issues related to ventilation and airtightness. The 2nd workshop is scheduled for March 2016 in Athens with a focus on sustainable summer comfort technologies. Also good to know that the 2nd QUALICHeCK conference in Brussels will be on 4 September 2015.

In this newsletter, you find a link to the first 2 reports produced by the consortium members on compliance of EPC input data and quality of the works. The present reports already contain information about existing studies in EU countries. A major outcome in 2015 will be the findings of the new data collection studies being carried out at this moment by the QUALICHeCK team in 9 focus countries. You can already have a sneak preview at the first results of the Estonian study on compliance with summer thermal comfort requirements in apartment buildings.

In order to achieve more compliance in EPC input data and/or quality of the works, action is required at country level. Further on, you find information about the national stakeholders concertation in Austria. In 2016, a series of similar events is foreseen in other participating countries.

Last but not least, QUALICHeCK will produce a series of factsheets and organise a series of webinars. The first factsheet presented in this newsletter is about a French quality management approach to improve building airtightness. The first webinar is scheduled on 27 April 2015. More factsheets and webinars are planned for 2015.

If you would like to be kept informed, please visit www.qualicheck-platform.eu.

Enjoy your reading!



Peter Wouters
QUALICHeCK Coordinator

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BauZ!

QUALICHeCK workshop as part of the BauZ! Conference 2015

by Susanne Geissler, ÖGNB

The BauZ! Conference (www.bauz.at) is an annual event addressing the Austrian construction industry, authorities and administration, representatives of the real estate sector, as well as architects and engineers involved in building design.

It was the objective of the workshop to introduce the QUALICHeCK project, to present a first batch of good examples from other European countries, to present first results from the Austrian new data collection study carried out by FH Technikum (Lukas Maul, Marc Wohlschak and a group of students, www.technikum-wien.at/fh/institute/erneuerbare_energie), and to explain the view of the real estate sector (Martina Hoffmann, FH Wien der WKW www.fh-wien.ac.at/immobilienwirtschaft/master-studium).

The presentations prepared the ground for discussions with about 30 participants, resulting in the following conclusions:

(1) It is necessary to have a two stages procedure, meaning that the design Energy Performance Certificate (EPC) needed for the building permit must be updated after completion of the building, because design changes and revision of decisions occur which need to be documented.

(2) Default values are important, because the use of default values results in EPCs allowing for comparison of buildings. However, some default values are unrealistic and need revision.

(3) In Austria, it is difficult to assess the impact of the EPC on the real estate market: The residential real estate market is divided into the market of buildings and building units being rented and the ones being sold. The residential renting market is regulated in detail, making it extremely difficult to assess the impact of energy efficiency on prices. The observation of the selling market shows that real estate agents present the





energy indicator as required by law, but leave out other parameters such as m², price, and location. Therefore legislation requiring the presentation of energy indicators in advertisements needs improvement. The energy performance certificate will only help in decision making if building specific information is provided and the EPC can be trusted.

Three posters presenting QUALICHeCK were displayed during the workshop and during the entire BauZ! conference in order to also reach conference participants not attending the workshop. The first poster describes the project as such, the second one presents the Austrian new data collection study, and the third one identifies important topics for further discussion and asks participants for their views and their priorities. We also tried to enhance stakeholder involvement by distributing a questionnaire including a short project description, asking for participants' opinion on quality issues related with the energy performance certificate. Participation was lively, and we are looking forward to the next national QUALICHeCK workshop to discuss specific topics in more detail.

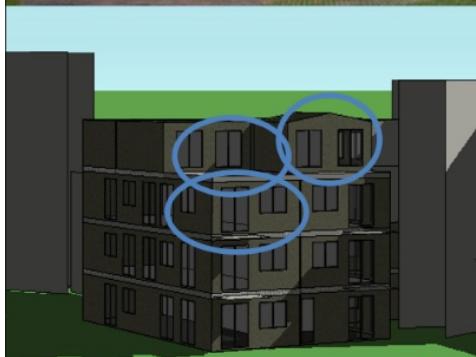
Centre: photo of a studied building (top) and its simulation model created with energy and indoor climate simulation tool IDA-ICE (bottom).

Right: in the temperature simulation procedure window airing is taken into account as buoyancy driven ventilation caused by the temperature differences so that the window needs to be in the airing position (cannot be fully open).

Compliance with Summer Thermal Comfort requirements in Apartment Buildings in Estonia

by Raimo Simson / Kalle Kuusk / Jarek Kurnitski, Tallinn University of Technology

In low energy buildings that are designed to be more airtight, with better insulation and often with large glazing surfaces, the risk of summertime overheating, especially in apartment buildings without mechanical cooling, becomes a serious problem also in cold climate regions. All buildings in Estonia that have acquired a construction permit after the year 2009 must comply with the minimum requirements for energy performance of buildings (Estonian regulation no 68) that regulates the summer thermal comfort with hourly-average temperature excess maximum limit of 150°C_h (degree hours) over +27°C.



In this Estonian study, which is part of the ongoing QUALICHeCK national new data collection study, we have investigated the compliance with summer thermal comfort requirements so far in 16 new apartment buildings (will be extended to 25 buildings) according to the requirements described in Estonian regulations no. 68, "Minimum requirements of energy performance" and no. 63, "Methodology for calculating the energy performance of buildings".

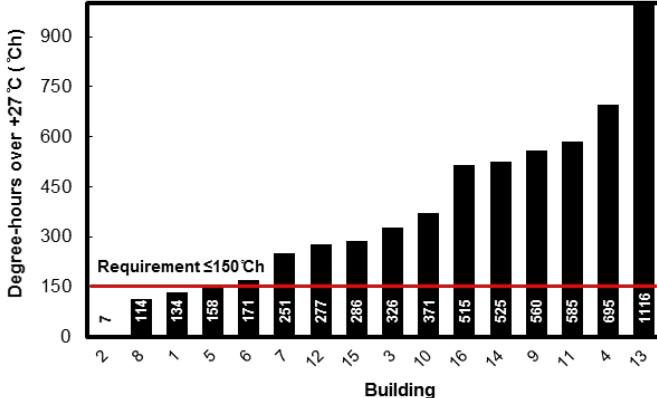
Compliance assessment was done for selected dwellings most likely to counter overheating problems - in every building calculations for at least one living room and one bedroom were carried out. For modelling and simulation we used the energy and indoor climate simulation tool IDA-ICE and analysed altogether 75 apartments. The simulations were conducted using the Estonian Test Reference Year climate data for the summertime period of 1 July to 31 August.

The studied apartment buildings were selected randomly with the criterion of built year 2009 or higher. The buildings varied in terms of architectural design, envelope construction type, glazing areas and window types, geometry, height, location, orientation etc.

From the 75 simulated apartments 31 reached higher indoor temperature excess values than 150°C_h. In several cases the temperature excess was either very close or slightly over the limit. The highest simulated values were reached in both room types in the same building, with over 1000°C_h in the living room and nearly 700°C_h in the bedroom.

Altogether in 13 out of 16 buildings (81%) the simulated temperature excess in apartments surpassed the limit value and thus did not comply with the summer thermal comfort requirements.





Simulated hourly-average room temperature excess in degree-hours over 27 °C in "worst case" apartments in studied apartment buildings during the summertime period of 1 July to 31 August. The requirement for compliance is ≤150 °Ch.

The study will be completed in the spring of 2015. It is one of the data collection studies being carried out in the 9 focus countries of QUALICHeCK with as aim to provide a better understanding of the national situation regarding the compliance with minimum requirements and the reliability of EPC input data.

First Meeting of the Austrian National Concertation Platform

by Susanne Geissler, ÖGNB

The Austrian QUALICHeCK partner ÖGNB - Österreichische Gesellschaft für nachhaltiges Bauen (Austrian Sustainable Building Council www.oegnb.net) consists of members representing the key players of the Austrian construction industry and is well connected with the Austrian real estate sector due to an established co-operation network. Therefore, ÖGNB assumed the role of the Austrian National Concertation Platform (NCP), aiming at promoting the objectives of the project and creating the societal support needed for achieving better compliance and better building performance without increasing the administrative burden for enforcement.

ÖGNB held the first NCP meeting on 21 January 2015, at the ÖGNB office in Vienna, with the focus on presenting the two pillars of the project, namely "quality of input data" and "quality of the works", and collecting participants' views on these specific issues influencing or rather determining the quality of the energy performance certificate, the quality of the constructed building and the acceptance of the EPC on the market. Presentation resulted in a vivid discussion with about 20 participants, taking more than 1 extra hour, clearly showing the need for action. Among

others, participants represented BUILD UP Skills, experts involved in quality control of energy performance certificates, construction companies, universities, experts calculating energy performance certificates, the real estate sector, and organisations providing additional financial support for increased energy efficiency. Main discussion points were the following ones:

- (1) The energy performance certificate calculated based on default values according to legislation is fully compliant in terms of meeting the minimum requirements but might not provide sufficiently specific building-related information requested by potential clients.
- (2) Quality of input data is linked with the calculation procedure and the respective software programmes; whereas the building envelope is well defined in the calculation programme there are challenges regarding the calculation of specific types of building services technologies.
- (3) Discussions regarding quality of the works showed that the Austrian BUILD UP Skills approach of training workers on-site and qualifying the so-called quality coach to be employed for co-ordinating the construction site were well received by participants.

There was agreement among the participants regarding the following aspects:

- The current legislation allows for the implementation of quality assurance procedures.
- There is a gap between the stages of building construction and building operation which needs to be bridged urgently.
- A control system is necessary and should embrace the phases of building design, construction, and handing over of the building.

TESTIMONIAL

Proper energy saving starts with a good design of the building envelope. It should be possible to draw a continuous double line around the protected volume without taking the pencil off the plan: one for a continuous insulation (no thermal bridges) and one, inside the other one, for the airtightness layer. If the design is properly put in practice, general build quality is the big winner.

It is essential though that energy performance calculation software validates these efforts by either attributing extra credits or through minimum requirements. In several European countries thermal bridges are accounted for by entering ψ (psi)-values in the appropriate field(s). For airtightness, default values can be replaced with better figures, also positively impacting the overall result in the energy performance calculation. It is clear though, that this value is preferably the result of an onsite pressurisation test rather than the result of a mere theoretical approach.

Apart from differences in legislation and requirements, differences in building practice also pose a big challenge to construction materials manufacturers. Moreover, contractors and craftsmen tend to stick to proven methods due to the risks involved.

Ideally products and solutions therefore do not simply meet requirements: they are reliable, user-friendly and time-saving at an acceptable cost. Newer generation elastic polyurethane foams for instance can help to reduce thermal bridging around windows, and significantly improve airtightness in one go. Recently brushable and sprayable liquid membranes were developed, which also offer fast(er) and reliable solutions for common airtightness issues.

In conclusion the industry can already provide reliable and innovative solutions for these fairly new challenges. Awareness raising is exactly what QUALICHeCK is looking into, at the crossing between these innovative solutions and an effective legal and compliance framework, significantly speeding up their acceptance by the construction market.

Filip Van Mieghem
Soudal

Fact sheet # 01 : Building regulations can foster quality management — the French example on building airtightness

by Remi Carrie, ICEE

One of the objectives of QUALICHeCK is to speed up the implementation and uptake of approaches to improve the reliability of EPC input data and the quality of the works in practice. To this end, a number of fact sheets to be produced by the consortium will analyse approaches that have been implemented, point out the pros and cons of options that may be considered, and give hints and pitfalls to avoid if replicated in other contexts.

Fact sheet # 01 describes how a quality management scheme has been introduced in the French energy regulation to encourage professionals to question their current practice and find effective solutions to improve building airtightness. The scheme allows successful applicants (mostly builders of single-family dwellings) to justify for a given airtightness level without systematic third-party testing. The fact sheet details the basic principles of the approach as well as the requirements applicants have to fulfil. It also builds on the evaluation and lessons learnt by state authorities on the scheme itself and its actual results.

At the end of 2014, 81 such quality management approaches have been approved representing a production of about 15.500 buildings per year. Overall, the evaluation shows the benefits of the approach to secure actual airtightness levels and to contain testing costs. The replication potential of this approach seems high, but the fact sheet shows a number of details that must be carefully addressed for successful implementation in other contexts.

Access the fact sheet at www.qualicheck-platform.eu

Save the Dates!

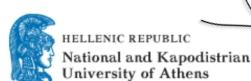
6-9 May 2015, Riga, Latvia: REHVA Conference incl. QUALICHeCK presence | www.hvacriga2015.eu

15-19 June 2015, Brussels, Belgium: EU Sustainable Energy Week | www.eusew.eu

4 September 2015, Brussels, Belgium: 2nd QUALICHeCK Conference | www.qualicheck-platform.eu

The QUALICHeCK consortium has been composed with an outlook on the project priorities, the intention to focus on 9 countries and 4 technology areas, and the need to have partners with good knowledge of the market and access to stakeholders and national governments. The consortium is led by INIVE and its member BBRI,

organisations with significant experience in managing European and international projects (e.g. ENPER, BUILD UP, ASIEPI, AIVC, TightVent Europe, venticool). The issues of compliance and quality of the works have been for many years priority topics within the context of the INIVE activities.



TALLINNA TEHNIKAÜLICKOOL
TALLINN UNIVERSITY OF TECHNOLOGY



Reminder: International Workshop on Ventilation and Airtightness in Buildings: Voluntary and Regulatory Frameworks to Improve Quality and Compliance

16-17 March 2015, Lund, Sweden

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.

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 organised by INIVE on behalf of the QUALICHeCK consortium; AIVC (Air Infiltration and Ventilation Centre, aivc.org); TightVent (Building and Ductwork Airtightness Platform, tightvent.eu); venticool (international platform for ventilative cooling, venticool.eu).

To register for the Workshop, visit www.qualicheck-platform.eu

Upcoming webinar on compliant EPC input data and quality of the works

27 April 2015, 10:00-11:15 (BE), 09:00-10:15 (UK)

The objectives of this webinar are: a) to highlight several issues on the quality of Energy Performance Certificates (EPC) input data or the quality of the works, which can be detrimental to achieving compliance in practice; b) to present preliminary results of field studies to evaluate initiatives addressing those two issues.

Attendance to the webinar is free but registration is required. Additional information and the registration link will soon be made available at www.qualicheck-platform.eu/events/webinars

QUALICHeCK reports available

- “Towards compliant and easily accessible EPC input data” – How to get reliable and accessible data for the energy rating calculation of a building? Overview of some existing approaches.
- “Towards improved quality of the works” – Documented examples of existing situations regarding quality of works

Access the reports at www.qualicheck-platform.eu/results/reports