



Air permeability measurement of a 125 m high-rise building

Stefanie Rolfsmeier, Emanuel Mairinger, Johannes Neubig, Thomas Gayer

Worldwide, there is an increasing demand for testing the air tightness of high-rise buildings with heights of 100 m and more. Air permeability measurements on such high buildings are still pioneering work, which is why the ISO 9972 test standard does not yet sufficiently cover this area. For the first time in Europe, an air permeability measurement was carried out in a 125 m high building in Vienna in February 2021. Special challenges were the uniform pressure distribution in the building and the handling of stack effect and wind. The measurement was based on the guideline "Airtightness measurement of high-rise buildings" of the Passive House Institute Darmstadt. In addition, differential pressure measuring points were distributed throughout the building envelope to obtain as accurate a picture as possible of the pressure distribution during the measurement.

The 125 m high measurement object has a volume of approx. 77,000 m³. It consists of 38 floors with 670 apartments including two basement floors. A stairwell and four elevators are located in the center of the building. The building is to have an air exchange rate at 50 Pa building pressure difference $n_{50} \leq 1.5 \text{ h}^{-1}$. The building preparation was done according to method 1 of ISO 9972:2015. The challenges of this measurement included establishing a uniform induced (fan generated) pressure distribution in the building (max. pressure drop $\leq 10\%$ of the induced building

pressure difference between inside and outside over the entire height) and dealing with the high and fluctuating natural pressure differences at the building envelope due to stack effect and wind. Thanks to careful planning, preparation, and exchange between experts from three countries, the measurement was successfully carried out in February 2021.

[Read more](#)



FireProtection 2021: New features

From mid-September, the **upgrade of the free FireProtection 2021 software** will be available with significant new features: the determination of extinguishing gas holding times is now optionally performed according to ISO 14520:2015, ISO 14520:2006, according to EN 15004:2019 and EN 15004:2008, as well as according to the guidelines VdS 2380:2019-03 and VdS 2381:2016-06. The new FireProtection has a trilingual structure. It can be used in German, English and French, as required. The introductory price (GET 10, PAY 5) is valid until October 15!



Back again: Trade-in of your DG-700 with purchase of a DG-1000!

With the introduction of the ISO 9972, higher requirements apply to the accuracy of pressure gauges

for air tightness measurements. The **DG-1000 pressure gauge** even tops these requirements with a measuring accuracy of 0.9% and delivers reliable measuring results with maximum precision. BlowerDoor customers appreciate the innovative pressure measuring device for its outstanding functionality and user-friendliness: It was voted 3rd in the haustec readers' choice in the category building envelope in general.

Benefit now from our trade-in promotion: Receive 300.- EUR for your DG-700 when purchasing a DG-1000 (promotion ends 15/10/2021)



Available again: Precise thermoanemometer TA8 with flexible probe

The **BlowerDoor hot-wire anemometer TA 8** is a thermal anemometer with telescopic probe and gooseneck. It is used in particular to detect leaks in buildings. With the movable flow probe, the areas to be tested can be easily detected. The wind speed is displayed in three switchable measuring ranges. The temperature measurement meets the requirements of ISO 9972 with an accuracy of ± 0.5 °C (ambient temperature 0 - 60 °C). The TA 8 has a large LCD 4 Hz display with touch screen as well as an average and logger function.



ALREADY KNEW?

EN 13829 - ISO 9972

Comparison of the EN 13829 and ISO 9972: We have compiled the most important changes for you in our **BlowerDoor Info Sheet**.



Next dates

Calibration

Please note the next calibration dates for your BlowerDoor fan:

06/09/2021 and

11/10/2021

(Latest delivery date for the fan). Please [register](#), thank you.

25th International Passive House Conference

10 - 12 September 2021 (Part 1 located in Wuppertal)

14 - 15 September 2021 (Part 2 online)

We recommend the presentation "Air permeability measurement of a 125 m high-rise building"
(14/09/21, Stefanie Rolfsmeier/BlowerDoor GmbH)

[More information](#)

Upcoming webinar

13 October 2021 at 2.00 PM: BlowerDoor FireProtection 2021 - New Features

[More information](#)

BlowerDoor Newsletter



Dear reader,

You receive our newsletter because you have given your consent on blowerdoor.com to be sent to your e-mail address. If you no longer wish to receive our newsletter, please click [here](#).

BlowerDoor GmbH

MessSysteme für Luftdichtheit | Zum Energie- und Umweltzentrum 1 | D-31832 Springe

Phone +49 (0) 50 44 975-40

Fax +49 (0) 50 44 975-44

info@blowerdoor.com

www.blowerdoor.com

Trade register in Hannover | HRB 101115 | VAT ID no.: DE 812810831

© All contents of this newsletter in text and illustration are protected by copyright.