

Webinar: Airtightness tests for high-rise buildings | 26 January 2024 (10:00-11:30 CET)

Questions from the audience

Questions for Stefanie Rolfsmeier (BlowerDoor, Germany):

Q1: What is the maximum allowed leakage in a PassivHaus in q_{e50} $m^3/h/m^2$?

A1: No limit value but a recommendation for q_{50} of less than 0.6

Q2: To reduce test uncertainty, have you considered modelling the building (prior to airtightness tests) using a program such as CONTAM to help decide where to place fans and how many stairwell and elevator shaft doors to open throughout the building?

A2: Yes, we have considered modelling the building (prior to airtightness tests) using a program such as CONTAM. For this we tried to get the colleagues from the University in Vienna. In the end, they couldn't manage it – because of time.

At the moment we use this estimation:

A door opening of 2 m^2 inside the building results in a pressure loss of:

- 1 to 2 Pa with an air flow of 7000 m^3/h
- and from 5 to 6 Pa with an air flow of 14000 m^3/h

A very helpful estimate.

Q3: What sort of safety measures were taken to address the possibility of a fire in the building during setup and tests?

A3: There was no additional safety concept for fire protection from our measurement team. We have had power in the building, that we could use.

Another issue is very important for the measurement period. Only the testing team and the responsible persons from the building side are in the building during the test time, no one else.

And it was more important in the Triiiple Tower to secure the open elevator doors, as there were fall heights of over 100 m.

Emanuel Maringer, the project leader, had to take responsibility for the elevator for the measurement period.

Questions for Benedikt Kölsch (Cerema, France):

Q1: Is the effect of air accumulation (balloon effect) due to air temperature changes (density), never considered?

A1: No, the variation of the volume is neglected, only the variation of pressure is considered.

Questions for all

Q1: To reduce test uncertainty, have you considered modelling the building (prior to airtightness tests) using a program such as CONTAM to help decide where to place fans and how many stairwell and elevator shaft doors to open throughout the building?

A1: It would be very interesting to do a prior modeling, however that would be very challenging to represent the real leakage distribution and pressure losses along the building. Therefore, it has never been done.