

Determining required air flow rates in large buildings – discussion of reference values

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Objective/Question

This presentation will give an introduction to the approach of determining the required number of testing fans when conducting air tightness measurements of large buildings. From experience in testing practice and recording measurement results, we know that large buildings regularly achieve significantly better test results than required by German regulations. To share our experience, we will present these good test results to start a discussion as to which limits of air tightness in large buildings can be considered adequate.

Approach and methodology

The topic will be presented showing two examples and the results from 42 measurements.

Presentation content

By way of two examples (school and high-rise building) the determination of the number of testing fans in theory will be compared with the number of fans actually used in practice. This is followed by the analysis of the measurement results using the parameters n_{50} and q_{50} for 20 buildings. The presentation concludes by examining the reference values given our measurement results, the requirements of the German Energy Savings Regulation and the testing standards.

Results and evaluation

Large buildings mostly achieve significantly better air tightness than is required by the limits.

Conclusions

For large buildings, stricter target values than stipulated in the standards should be required as early as in the planning phase.