

Summary

Do the generally recognized rules of the technology require a controlled ventilation in dwellings?

Liability risks with dwellings without ventilation systems

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Due to practiced building practice in the past decades the preservation of a sufficient room air quality usually proved as unproblematic. The necessary air-change was already regularly ensured by the so called free ventilation of dwellings, i.e. over existing building leakages. For this neither purposeful constructional measures nor special user support was required. Due to newer, more energy efficient building methods, as they are in the meantime also prescribed, this state of affairs however fundamentally changed. Since both after public and relevant DIN regulations the airtightness of the building envelope is to be ensured, now to the ventilation over building leakages an only subordinated meaning is attached. Additional ventilation measures are therefore required for sufficient ventilation of dwellings.

Such additional ventilation measures according to the regulations of the present set of rules compellingly do not presuppose the planning of appropriate constructional measures, like in particular a controlled ventilation. Without such constructional measures however, a sufficient ventilation of dwellings is ensured only if additionally a user-supported ventilation takes place. A user-supported ventilation for the securing of a sufficient air-change only corresponds to the generally recognized rules of the technology however, if this has been experienced as a technically suitable, appropriate and necessary measure acknowledgment in general building practice.

To which extent the securing of a sufficient change of air can be left to the user alone, is appraised differently in the iurisdiction and literature. A view is advanced however predominantly that a dwelling must be constituted in a way, that the necessary room air quality is ensured „with normal user behavior“² and without „special ventilation measures“³ or „complex ventilation measures“⁴ of the user are necessary. A sufficient room air quality requires that a change of air is guaranteed by $0,5 \text{ h}^{-1}$ after the gained findings in science, as they already entered into the relevant sets of rules. After the view represented predominantly in the technical literature such an air change can be reached with the prescribed close building envelope however only, if the user several times daily, if not even approximately every two hours carries out a windows ventilation in the way of impact- and/or cross-ventilation.

Regarding such an extent of necessary ventilation arrangements to be taken by the user, it appears to be highly questionable whether the taking of such measures can be required regularly according to the today's understanding of a normal occupancy behavior and the demands made in present practice to the general housing comfort.

If one comes however to the result, that a ventilation over building leakages as hitherto is no longer permissible according to the generally recognized rules of the technology, and that it is also not compatible with the generally acknowledged rules of technology, to leave the necessary additional ventilation measures to the user alone, then this only permits the conclusion, that a sufficient air interchange, how it is necessary for the preservation of room air quality, is only to be guaranteed by appropriate constructional measures. As such a constructional measure the controlled ventilation is to be regarded.

In the technical science it is, so far evidently, not challenged, that a sufficient room air quality can be ensured by a controlled ventilation. Due to continuing practical experience the controlled ventilation proved to that extent to be technically suitable. Even if at present it still should be regarded as questionable, whether the requirement of a controlled dwelling ventilation, with the involved in the execution of construction work be regarded as throughout well-known and also as necessarily recognition, the presumption is justified considering the argued situation, that this realization will increasingly become generally accepted. This already applies alone with regard to the fact, that a planner exposes himself to monumentally substantial liability risks, if he does not point out to the owner, that a sufficient room air quality without a controlled ventilation is only guaranteed, if the user takes steps to extensive ventilation measures. Not later than this insight became generally accepted, one will have to regard the requirement of a controlled ventilation as generally acknowledged rule of technology.