12. Short Summary

Appendix 8 "Requirements for structural facilities with regard to health protection (ABG)" of the MVV TB specifies the health-related requirements for structural facilities by specifying requirements for constituents and for the release of harmful substances from building products (MVV TB 2017 / 1, MVV TB 2019 / 1). This is based on the testing and evaluation scheme of the Committee for Health-related Evaluation of Building Products (AgBB scheme).

In several standardization control procedures, individual manufacturers of coarse particleboard (OSB) and (resin-bonded) particleboard have raised objections to the ABG and the regulatory concept anchored here to limit emissions of volatile organic compounds (VOCs).

The objections to the ABG raised against the test procedure and the emission behavior of OSB and particleboard are dealt with on the basis of results and findings from measurements taken on specific occasions. For this purpose, the AgBB scheme and evaluation systems for indoor air as well as the use of OSB and particleboard in common rooms, the VOC emission behaviour, including the decay behaviour, and indoor air concentrations in buildings using OSB/particleboard are considered.

The release of volatile organic compounds from wood-based materials is mainly determined by terpenes as primary emission and by aldehydes and carboxylic acids as secondary (reactive) emission. While the emissions of the terpenes in the test chamber and in real rooms decrease over time, increases are also observed for aldehydes and carboxylic acids. The emission of the carboxylic acids is of particular importance, since high concentrations of acetic acid can occur and the course of the emissions is less predictable. It must be expected that the analytical method mainly used for the determination of carboxylic acids (without formic acid) will show false results. It is therefore necessary to adapt the test procedure for the carboxylic acids (as already recommended in DIN EN 16516) and their evaluation for emission and immission measurements.

Indoor air measurements show a typical immission spectrum for the use of wood-based materials. Occasions for indoor air investigations in connection with the use of OSB panels are health complaints (including irritation of the mucous membranes) and unpleasant odors. Depending on the type and quantity of the wood-based materials used, complaints are to be expected, especially in rooms with a high load and low air exchange rate. The evaluation of the test chamber examinations of OSB and particleboard showed a heterogeneous picture. From the comparison of the NIK values for the test chamber investigation with the interior guide values RW II as a hazard value, it can be deduced that if single material NIK values are not complied with, indoor air concentrations that are harmful to health can also be expected. By means of emission tests, indoor air concentrations can be estimated and sources of pollution can be determined. A direct transfer of the emission test results to a real room is often not possible due to the multitude of other influencing factors.