

Methodology of Acoustic Measurements of Heterogeneous Building Materials

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At present, the high level of acoustic load is becoming a serious problem due to its influence on human health. It is especially significant in urban areas with heavy traffic or in the vicinity of the airports. Therefore, bearing materials with good acoustic properties should be used in order to protect people against adverse effects of audio noise on health in buildings located in such areas. In the Czech Republic, different types of bricks and brick blocks are used for constructions of new houses' bearing structures. Whereas thermal properties of such materials were widely studied in the past and brick products are already optimized in such way, studies dealing with acoustic properties not only in empirical way in accordance with the technical standards, but from the physical point of view, especially those dealing with acoustic attenuation are infrequent. In this paper, an experimental measurement technique based on audio transmitter generating defined sound waves and a set of receivers measuring attenuated signal was designed and is discussed. Obtained experimental data are supposed to be utilized as an input to further FEM calculations.