
EFFECT OF SAMPLE AREA ON TESTING RESULTS OF DETERMINATION OF MATERIAL'S SOUND ABSORPTION ABILITY BY REVERBERATION ROOM METHOD

Ly Tuan Truong¹, Trinh Hien Mai², Nguyen Van Dien³

^{1,2,3}*Vietnam National University of Forestry*

SUMMARY

The objective of this study was to determine the appropriate sample area for the evaluation of the material's sound absorption ability by reverberation room method ensuring reliability in specific laboratory environment conditions. The experimental study was conducted to evaluate the sound absorption of the reverberation room before and after two samples of materials with different levels of area were given, from which, through the evaluation of the stable value of the difference of sound absorption coefficient between the material samples and threshold ($\Delta\alpha$) to determine the sample area suitable for the experiment. Research results showed that the sample area had a clear effect on the results of the observation and calculation of the sound absorption coefficient of the material. When measuring the sound absorption coefficient of the material by reverberation room method with the room volume (about 120 m³) and the specific conditions as described in the experiment, the sample area should be at least 8 m² to ensure reliability (more than 9 m² recommended). For each material, the minimum sample area and the best sample area are also different. When measurements are made to evaluate the sound absorption coefficient of the material by the reverberation room method, the test sample should be determined the most suitable area by evaluating the sound absorption coefficient difference $\Delta\alpha$.

Keywords: Measurement method of sound absorption coefficients, sound absorption, sound absorption coefficients, sound absorption materials, the reverberation room method.

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