

Original Paper

Measurement Uncertainty in Airborne Sound Insulation and Single-Number Quantities: Strategy and Implementation in Indian Scenario

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Abstract

This paper presents the factors affecting the uncertainty of measurement in sound transmission loss testing and the single-number quantities (*SNQs*) used widely in building acoustics. It provides a retrospective view of the recently published work especially in European continent and standard ISO 12999-1 for interpreting and elaborating the concept of calculation of measurement uncertainty in *SNQs* particularly for the laboratories engaged in sound transmission loss testing in India by presenting case studies for different types of building materials. The study suggests that the poor low frequency sound insulation and low frequency mass-air-mass and flexural resonances inculcate a higher uncertainty in *SNQs* for building elements. It is imperative to adopt the strategy recommended in ISO 12999-1 in Indian scenario particularly with growing international trade in building materials and technology and for the recognition as well as acceptance of testing results of Indian laboratories across the globe.

Keywords

Airborne sound insulation; Single-number quantity (*SNQ*)